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REG. U.S. PAT. OFF.

VOLUME 125, No. 18 OCTOBER 30, 1947

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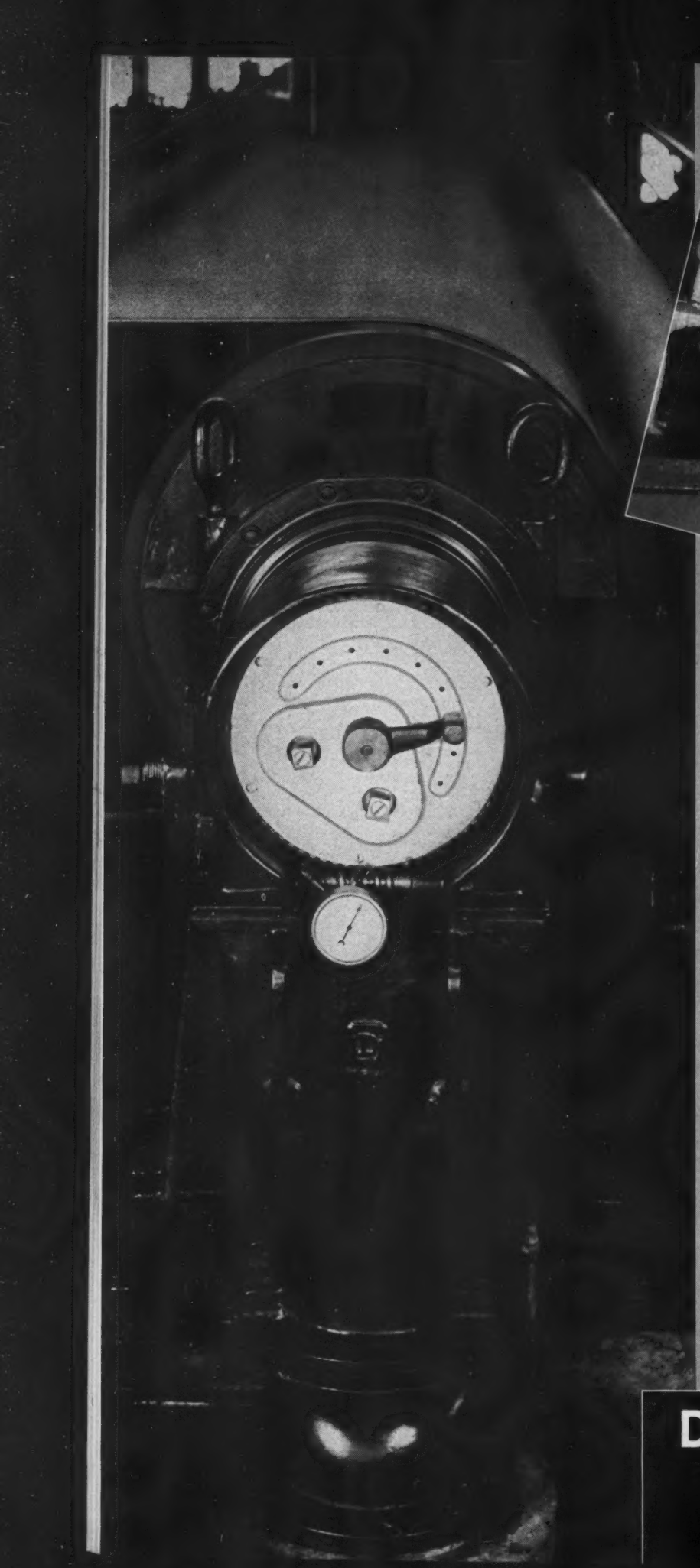

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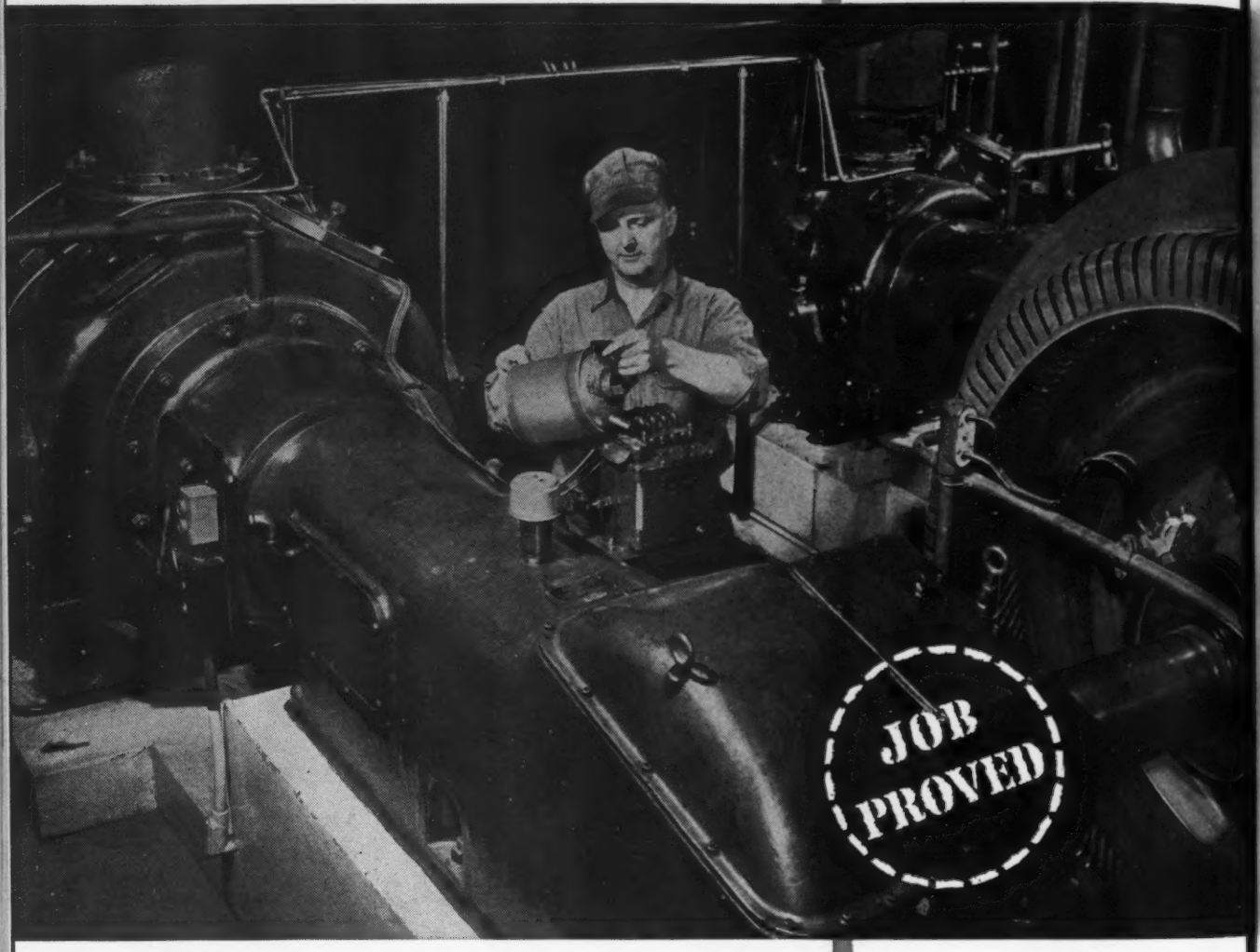
CALENDAR OF COMING EVENTS

November 3-5, 1947—TAPPI Second Engineering Conference, Philadelphia, Pa.

November 13-14, 1947—National Paperboard Association Annual Convention, the Waldorf-Astoria, New York.

May 18-20, 1948—American Pulp and Paper Mill Superintendents Association, Annual Meeting, Roosevelt Hotel, New Orleans, La.

Three Years Without a Shut-Down



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The multi-stage, duplex air-compressor shown above operates 24 hours a day, supplying air to equipment in a big Eastern power plant.

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Paper TRADE JOURNAL

VOL. 125, NO. 18 REG. U.S. PAT. OFF. OCTOBER 30, 1947

Tinker Holds Paper A World Commodity

CHICAGO—Because it is a basic tool of social progress, and because its production absorbs 10 per cent of United States imports, paper has gone far beyond the stage of being a domestic commodity. E. W. Tinker, secretary of the American Paper and Pulp Association presented this view of their business to members of the National Paper Trade Association on Tuesday of this week at their fall convention here.

"The general public does not realize," said Mr. Tinker, "and perhaps understandably so, what an important part our industry plays in international trade. Most people think of the United States in terms of a nation principally importing such goods as coffee, rubber, tin and silk, to mention just a few of the more prominent commodities, and yet we as an industry account for approximately ten per cent of the total imports of this country. I do not believe that serious thought has ever been given as to how important a part our industry plays in helping to create foreign exchange so that other nations can have the balances necessary to purchase other commodities from us.

"This common every-day article—paper—is really a very vital factor in international trade. Let me cite a few rather astounding statistics to show you gentlemen what I mean. They were a revelation to me, and they may perhaps be equally significant to you. Last year we imported in all 419 million dollars worth of pulpwood, wood pulp, other paparmaking materials, paper and paperboard. For the first eight months of this year our imports have amounted to 416 million dollars for these articles of commerce, and will approximate 600 million dollars for 1947. Exclusive of the value of casein clay and papermaking chemicals, our industry will have created over a billion dollars in foreign exchange during 1946 and 1947.

"Like most other large industries, our industry has embarked on a broad post-war expansion program. On the basis of a survey the American Paper and Pulp Association conducted in the fall of 1946, the capacity of the industry was to be increased by three million tons for the period 1946 through 1948. We are conducting a new survey at present to ascertain what changes in plans management may have made. We know a good deal of this expansion has already been completed as reflected in the substantial increase in production in 1946 over 1945, and the ten to twelve per cent increase this year over last.

"The question naturally arises—is our industry over-expanding? Our present population is approximately 144 million, an increase of ten to eleven per cent since 1939. Our per capita paper consumption in 1939 was 244 lbs.—for 1947 it will have risen to about 350 lbs.—that is a 106-lb. increase in the short span of nine years!

(Continued on page 22)

Fowler Expresses Concern at Shortage of Freight Cars

TORONTO—President R. M. Fowler of the Canadian Pulp and Paper Association, in an address before the Canadian Club at Montreal last week expressed fear that the pulp and paper industry, particularly newsprint, would run into trouble this winter, due to shortage of boxcars. Six hundred freight cars are needed every day to handle the outgoing traffic of the industry and incoming supplies need almost another 600 cars to bring in raw materials, particularly pulpwood. He said 25 per cent of the entire supply of pulpwood is moved by rail. Unless the railways can keep a flow of raw materials moving into the mills and finished products moving out, production is bound to suffer, he warned.

Mr. Fowler took issue with those who criticize the industry for its present prosperity. With an investment of nearly $1 billion in plant and equipment which cannot operate without pulpwood, the industry must maintain and conserve forest holdings for future use, he explained. Today, with both demand and prices at higher levels the companies are pouring money back into the woods. He believed that companies were rapidly approaching a sustained-yield basis in their forest operations.

Barring the possibility of another war or world-wide economic collapse, Mr. Fowler said he thought the future of the pulp and paper industry looked bright. Development of rayon production has greatly increased the world's demand for dissolving pulps; wartime shortages of jute and cotton have led to substitution of multiwall paper sacks of which much should be permanent. Expanding educational facilities and a greater interest in world affairs have increased the demand for newsprint over the last 35 years, and there is no evidence that this upward trend is levelling off. Before the war, Canada supplied three of every eight newspaper pages printed throughout the world, while today, three out of every five pages printed are supplied by Canada. Canadian pulp exports have trebled in volume since before the war. Mr. Fowler predicted that the industry would continue to meet the rising demands of the world for pulp and paper

(Continued on page 31)

Wiggins Teape Directors Return Home on Elizabeth

NEW YORK—G. B. C. Johnston and C. E. L. Whitehouse, directors of Wiggins, Teape & Co. (1919) Ltd. of London, England, sailed for home this week on the *Queen Elizabeth* after a six-weeks' circuit visit to Canadian and American paper mills.

Arriving in Canada on September 16, Mr. Johnston and Mr. Whitehouse visited Montreal, Quebec, Ottawa, Toronto, Calgary, Banff, Vancouver, Power River, Seattle, Fort Madison, Kalamazoo, Cincinnati and New York. In reply to comment that their rate of travel had rivaled the pace of New Yorkers, Mr. Whitehouse said they had tried to exceed it. Mr. Johnston said that a lot of changes had been made in the eight years since their last visit, and they were taking home recollections of their warm welcome.

Rain Lifts Hazard In Wisconsin Forests

MADISON, Wis.—The forest fire hazard in northern Wisconsin was greatly reduced as the result of heavy rains late last week, and a ban on all forms of hunting and trapping was ordered lifted on October 25. Although there have been 257 fires in Wisconsin forests during October, only 5,648.68 acres were affected. The ban on outdoor fires continued in effect.

There were new outbreaks in upper Michigan late in the week, however, which officials characterized as a "maximum hazard." All of the numerous fires were reported under control.

Diamond Match Names Robert Fairburn

NEW YORK — Robert G. Fairburn, first vice-president of Diamond Match Company, last week was elected president and chief executive officer, succeeding his father, the late William A. Fairburn. At the same time the board of directors elected H. F. Holman as chairman. Mr. Holman has been treasurer of the company since 1921 and a director since 1934. Henry G. Lucas, now secretary, was named vice-president and secretary.

Mr. Fairburn was president of the B-F-D Company, largest producer of strike-on-box matches in the U.S. and manufacturer of paper and woodenware, from 1942 until the company's merger with Diamond last spring. He had joined B-F-D in 1932 and was elected first vice-president of Diamond following the merger.

The board of directors also re-elected W. O. Augustine as vice-president and renamed an advisory committee composed of Elisha Walker of Kuhn, Loeb and Company; Edward T. Gardner of Gardner-Richardson Company; and Mr. Fairburn.

Sverre H. Grimnes, formerly associated with the U. S. Wallboard Machinery Company of New York City, as a mechanical engineer, has been made chief engineer of the Plattsburg and Ogdensburg plants. Mr. Grimnes had been plant engineer of the Munising Paper Company, Munising, Mich., from 1937 until 1945. Prior to that his experience included research engineering and designing for the General Motors Research Corporation of Detroit, Mich. Mr. Grimnes received his degree in engineering in Norway. He succeeds W. J. Lessard who is resigning November 1st to go back to Chas. T. Main, Inc., consulting engineers, of Boston, Mass., from whom he had a year's leave of absence.

Elwood C. Keyser assumed on October 1 the position of paper mill superintendent of the Plattsburg plant. Mr. Keyser graduated from the New York State College of Forestry at Syracuse University in 1933, and has been with the company ever since. He has progressed upward through the various departments and divisions of the mill, having been foreman in Technical Control Department, foreman of Pie Plate Department and Groundwood Mill, assistant superintendent of Pulp and Paper, and Moulded Pulp, and now paper mill superintendent. Mr. Keyser succeeds the late Otto Wilke.

Charles N. Hagar, Jr. will assume the duties of technical director of the Plattsburg and Ogdensburg plants November 1st. Mr. Hagar is a graduate of the University of Maine, School of Chemistry. He started in the company's control laboratory at Plattsburg, then went into the development section as a research engineer, and was then promoted to position of chief

(Continued on page 20)

ROBERT G. FAIRBURN

DeZemler Joins Reinhold-Gould As Assistant Sales Manager

NEW YORK—Charles DeZemler, Jr., former mid-western representative for Brightwater Paper Company, Adams, Mass., has joined Reinhold-Gould, Inc., New York distributors of printing papers, as assistant sales manager to Fred H. Pinkerton, vice-president and general sales manager.

Mr. DeZemler will specialize in the direction of sales to printers and lithographers, Mr. Pinkerton declared. He emphasized the point that Mr. DeZemler's experience in missionary and service activity with paper merchants' salesmen in Cleveland and other midwestern cities since his return from service with the U. S. Army Air Corps would be of inestimable assistance to the Reinhold-Gould salesmen and their customers.

No stranger in New York graphic arts circles, Mr. DeZemler, prior to the war, was the Brightwater company's representative here.

R. H. Jebens Joins Patterson Foundry

EAST LIVERPOOL, Ohio—Raymond H. Jebens has joined The Patterson Foundry & Machine Co. as chief chemical engineer, according to announcement today. He will be available for consultation on processing problems and will apply his experience to the development and application of Patterson equipment.

Mr. Jebens was formerly associated with the duPont Company where his work included synthesis experimentation and process engineering in organics, heavy chemicals, and paints. He has had long experience in research and design of heat transfer and mixing and processing equipment, and was one of the engineering group which designed the Oak Ridge, Tenn., and Hanford, Wash., plutonium plants.

Potsdam Mills Names Mead Mill Manager

POTSDAM, N. Y. — Roland I. Mead has been appointed mill manager of the Potsdam Paper Mills, Inc., a new industry in this village.

The business is located in the old Unity paper mill on lower Depot Street, acquired recently by a syndicate headed by Victor S. Fox of New York City.

Mr. Fox, president of Fox Feature Syndicate, Inc., publishers of comics magazines, and Central Color Press of Wilkes-Barre, Pa., printers of comics magazines, said that the acquisition of the Potsdam Paper Mills gives the Fox group a completely integrated operation manufacturing its own newsprint and cover stock and printing the magazines published by Fox Feature Syndicate, Inc., and other publishers.

Newsprint and cover stock is being manufactured at the Potsdam plant principally from reclaimed waste from the binding operation of the Central Color Press, Inc., Wilkes-Barre, Pa., where eight million comics magazines are produced monthly.

Additional machinery and equipment to increase the mill capacity is being installed under the direction of F. B. Oldham of the American Industrial Company.

Syd Koons Heads Cleveland Division

NEW YORK — Syd R. Koons for 24 years representative of the Union Paper & Twine Company at Cleveland, Ohio, has been appointed manager of the newly opened division in Cleveland of Charles A. Koons & Company of this city. This office and warehouse of the Koons company will be devoted to the merchandising of fine and coarse paper and cordage in Cleveland and northern Ohio. Headquarters are in the Park Building, 140 Public Square.

Syd Koons has been well known to both the sources of supply and to the jobbing and consuming trade in and about northern Ohio since 1923. In that year he came to the Cleveland area as salesman for the Union Paper & Twine Company and in 1938 he was advanced to the managership of their Twine and Specialty Department, which included the purchasing, sales promotion and sales training with this department.

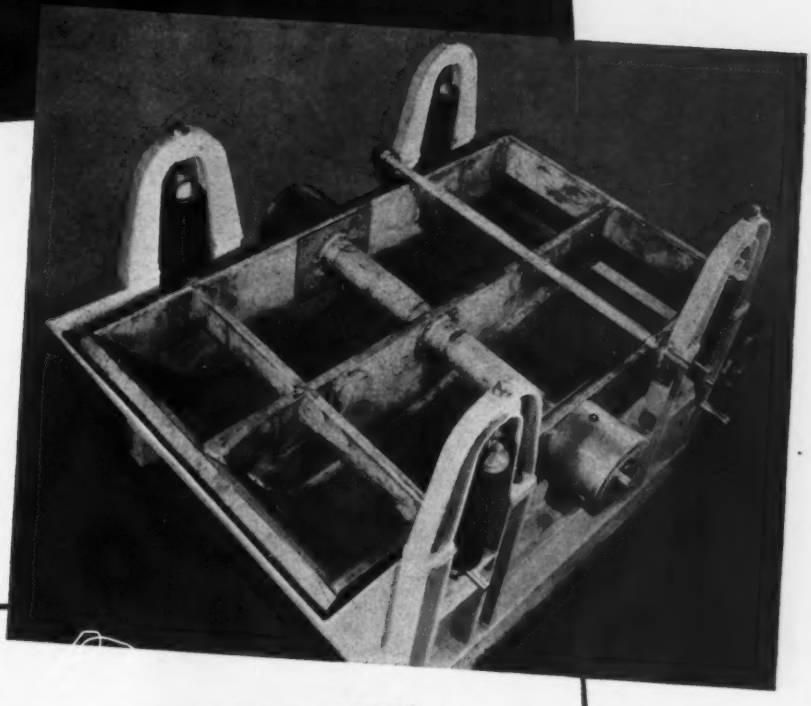
United Paperboard Names Fussell at Thompson Plant

NEW YORK CITY—O. P. Fussell has been named superintendent of the Thompson, N. Y., plant of the United Paperboard Company. United Paperboard operates board mills at Lockport, New York; Thompson, New York; and Urbana, Ohio. It also operates carton plants at Victory Mills, Syracuse, Brooklyn, and Cohoes, N. Y., and Springfield, Ohio.

TAKES OUT THE KNOTS BUT NOT THE FIBRES

Bird's Jonsson Screen removes the knots clean and whole but there's virtually no fibre to be found in the tailings.

For clean pulp and lots of it at low cost there's nothing to equal the Jonsson Screen.



IDEAL FOR
KNOTTING AHEAD OF BROWN STOCK WASHERS

The Jonsson Screen delivers stock to the washers free of knots and chips, assuring better vacuum and increased black liquor recovery. It handles any consistency from 1.3 to 2.25%. It turns out as much as 150 tons per day.

BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS

Georgetown Mill to Spend $10 Million

GEORGETOWN, S. C. — C. L. Crain, local manager, predicts peak production and employment in 1948 for the Georgetown mill of the Southern Kraft Division of the International Paper Company. Mr. Crain said the company would spend an estimated sum of $10,620,573.97 in pulpwood purchases alone during the coming year.

"This expenditure," he explained, "is the Georgetown mill's part in the $37 million overall Southern woodlands operation of the company, which was announced October 19 by the Southern division of the company in Mobile, Ala.

"The Georgetown mill with 1,931 employes, is one of the Southern division's eight Southern mills obtaining 90 percent of their annual pulpwood requirements from individual woodlands owners in 10 Southern states.

"While the overall estimate of $37 million is an increase of $8 million for the company's Southern pulpwood purchases over the last full year of woodlands operations in 1946," Mr. Crain continued, "it is difficult at this time to say exactly what effect this increase may have on the Georgetown mill. I think it is safe to say, however, that we can look forward to a year of full production and employment in 1948."

In detailing the woodlands operations of the Southern Kraft division of the company, the report states that in 1946 a total of 2,727,820 cords of Southern pine and hardwood, requiring the transportation facilities of railroads, barges, and trucks were delivered to the company's eight Southern mills. This represented approximately 18 percent of the total pulpwood supply of the country.

The total acreage of Southern woodlands owned or controlled by the company, the report concludes, is only 1.2 percent of the 167,000,000 acres of privately owned woodlands in the South and one percent of the total woodlands of the South. During 1946 a total of 167,947 new acres was acquired by the company in the States of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North and South Carolina. Total holdings are now 1,950,326 acres, on which there are about 12,000,000 cords of pine pulpwood.

Camden Mill Expects To Have Big Year

CAMDEN, Ark.—Peak production and employment by the Camden mill of the International Paper Company's Southern Kraft Division were predicted last week by P. J. Sievert, manager, who said that the mill will spend an estimated $2,719,000 in pulpwood purchases alone during 1948. This expenditure is a part of the $37 million allotted for operation of the company's southern woodlands division. Arkansas will share in this expenditure with North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, eastern Oklahoma and eastern Texas. The company also is carrying on educational campaign to urge planting, cultivating and harvesting of timber as a regular crop on Southern woodlands and farms.

Chickasaw Mill Will Get New Water Plant

BOSTON — A construction project amounting to approximately a million dollars has just been commenced by Hollingsworth & Whitney Company designed to improve the water supply system for its Chickasaw mills at Mobile, Alabama. The program is an elaboration of work planned in connection with the paper manufacturing plant which was deferred because of the war.

The new improvements are undertaken for the primary purpose of assuring an adequate long-term supply of pure water which is essential in its manufacture of high grade papers.

The work planned involves construction of a modern water treatment plant, designed to treat a total of ten million gallons of water per day; a new pumping station and the construction of approximately three and one-half miles of underground steel pipe line to convey the water to the treatment plant and mill.

The water treatment plant, which will be mainly of reinforced concrete and steel construction, will include a flocculator-clarifier structure, a rapid sand filter plant, with filtered water feeding to a clearwell reservoir, and a three-story chemical building of steel and brick construction. Water for filter sand washing will be supplied from an elevated storage tank. The filter plant is north of the company's mills along the Terminal Railroad of the Alabama State Docks, from whose tracks it will be served by an 1800-foot railroad siding. Included in the paper company's program is the construction of an addition to its mill laboratory to provide facilities for carrying on water analysis in connection with operation of the new plant.

Holyoke's Water Power Drop Limits Paper Mill Operations

HOLYOKE, Mass.—With no relief from the month-long drought in sight, the Holyoke Water Power Company has declared it may have to restrict further the water supply to local paper mills and other manufacturing plants.

For more than a week, mills have been limited to approximately one-quarter of the usual water consumption of 8500 cubic feet per second. Some of the plants closed over the week-end but none has been forced to shut down this week in spite of heavy restrictions. The river is running very light, according to Water Power officials.

82,000 Acres Added To St. Regis Holdings

NEW YORK—Roy K. Ferguson, president of the St. Regis Paper Company, late last week disclosed acquisition by St. Regis of all outstanding stock of the Ellsworth Forest Products Corporation, of Ellsworth, Me. The purchase increases by 82,000 acres St. Regis' timberland holdings in the state of Maine and brings the company's total in the United States and Canada to more than 1.7 million acres.

Ellsworth Forest Products will be operated by St. Regis as a wholly-owned subsidiary. The newly-acquired company, incorporated in 1930, has been using some of its timber for pulpwood, as well as conducting a lumber business. It operates sawmills at Lead Mountain and Waltham, Me., and a planer mill at Ellsworth Falls. St. Regis will utilize the pulpwood from the new holdings for the manufacture of printing, publication and converting papers in its mill at Bucksport. The Ellsworth company will broaden its activities by means of a sizable pulpwood operation, together with a continuation of its lumber business. The high standards maintained by St. Regis and Ellsworth for timberland conservation through selective cutting will be continued in the new pulpwood operations.

The purchase, according to Mr. Ferguson, will help assure a perpetual supply of raw material for the company's large paper mill at Bucksport. The agreement will make available to St. Regis an excellent stand of hard and soft woods adjacent to other St. Regis lands in Maine, bringing to 579,000 the number of acres in that state which St. Regis either owns or utilizes for pulpwood operations.

Consolidated Benefit Group Gets Greater Coverage

WISCONSIN RAPIDS, Wis.—Employes of the Consolidated Water Power and Paper Company who come under the Employes' Benefit Association plan are receiving an increase from $1,500 to $2,000 in individual life insurance policies and several other increases in benefits. The insurance increase will go into effect November 1 and the other benefits went into effect October 10. Sick benefits have increased from $18 to $21 per week, up 50 cents daily. The maximum surgical benefit for dependents, originally $75, has been raised to $150, equaling the sum provided for employes. The company and employes each pay an equal share of the costs.

Marathon Forms Credit Union

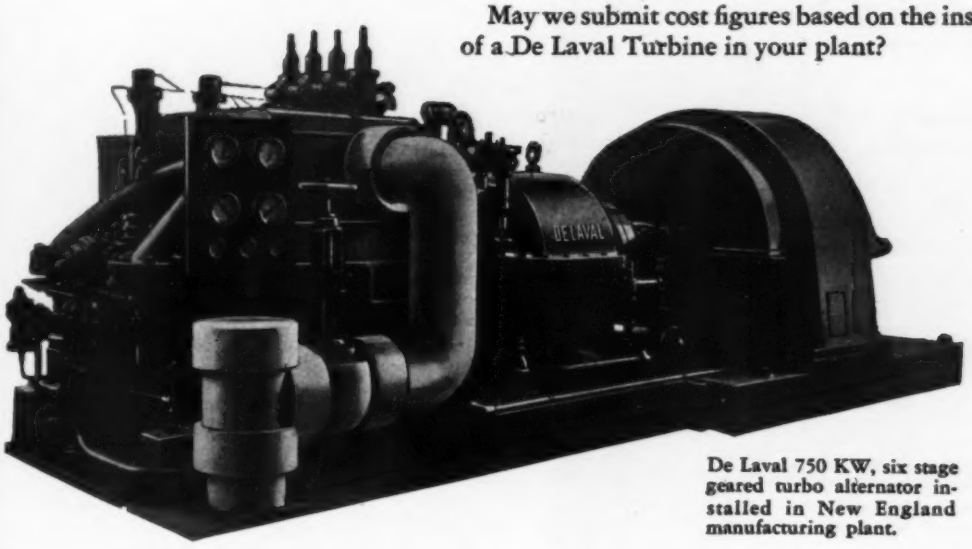
MARINETTE, Wis.—The Marathon-Menominee Credit union was organized October 22 at the Marathon Corporation office, at Menominee, Mich. Ronald LaBombard was elected president.

where there is HEAT there is POWER

Don't overlook the economy of generating your own power with a De Laval turbine wherever appreciable quantities of steam are required for heating buildings, dryers or processes.

In many installations the entire cost of the turbo-generators and auxiliary equipment has been repaid in two or three years. In fact, the installation of a modern high pressure steam plant often results in the production of both power and process steam at a fuel cost no greater than that entailed for the production of process steam alone, with older equipment.

May we submit cost figures based on the installation of a De Laval Turbine in your plant? T-6



De Laval 750 KW, six stage geared turbo alternator installed in New England manufacturing plant.

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Gair Old Timers Dine At 15th Reunion

NEW YORK—About 100 members attended the fifteenth annual banquet of Gair Old Timers Association held on October 18 at the Hotel New Yorker. This association, founded in 1933 in memory of Robert Gair, founder of Robert Gair Company, Inc., by those who worked with or had worked for Mr. Gair or his company, has continued with undiminished interest.

Officers for the year 1947-48 were elected at the dinner as follows: Honorary presidents: William Relihan, of Densen Banner Co., Ridgefield Park, N. J., with Gair 1896-1927, and John Martin, commercial artist, Rockville Center, Long Island, with Gair 1895-1929; president: Louis Barbieri, vice-president of Sterling Engraving Co., New York, with Gair 1915-1926; vice-president: William Baxter, division accountant, Gair Bogota Corporation, Bogota, N. J., with Gair and subsidiary 1927 to date; secretary-treasurer: John A. Coakley, Eastern States Cartons Division of Gair Company, Brooklyn, N. Y., with Gair Company since 1910.

Mr. Barbieri, the newly elected president, received his initial training at Gair's where he started as a boy, and he is now an authority on package engraving with customers all over the world. He is a veteran of World Wars I and II, and in the latter was Chief Q.M. on the U.S.S. Allentown. His hobbies are travel, color photography, and the collecting of fine and antique china.

Paisley Names Managers At Boston and Philadelphia

NEW YORK — Percy P. Morningstar has been appointed manager of the New England branch of Paisley Products, Inc., with headquarters at 79 Milk Street, Boston. Mr. Morningstar has augmented his technical sales staff to improve Paisley's scientific adhesive service in his territory, formerly serviced from the main plant in New York City.

Sam Stewart will direct the Paisley branch office at 15th and Market Streets in the Harrison Building, Philadelphia. Mr. Stewart will operate his technical sales force in Pennsylvania, Southern New Jersey, Delaware, Maryland, Virginia, West Virginia, and North Carolina.

Edwin Hillary, sales manager of Paisley's New York plant, declares that enlarged plant capacity and the development of several new cake form animal base glues and resin base glues enabled the expansion of their sales activities to paper converting and other adhesive consuming industries.

Plan New Funds for Wisconsin River Power

WISCONSIN RAPIDS, Wis.—Applications were filed October 22 with the Securities and Exchange at Philadelphia by two Wisconsin power companies for permission to carry out a financing plan for Wisconsin River Power Company of Wisconsin Rapids. The utility companies are Wisconsin Public Service Corporation of Milwaukee and Wisconsin Power and Light Company of Madison.

The companies propose to buy from Wisconsin River Power enough shares of common stock to provide Wisconsin River with sufficient funds to acquire and develop two dam sites on the Wisconsin river for production of hydro-electric energy.

The application stated about $3,000,000 will be needed by Wisconsin River.

Wisconsin River was organized last January 9 as the result of a contract between Consolidated Water Power and Paper Company and the Wisconsin Public Service Corp., for the purpose of acquiring and developing two dam sites other than those owned by Consolidated.

J. M. WRIGHT

Appointed by the Rochester Paper Co., Rochester, Mich., to be assistant director of sales. Mr. Wright was formerly with the Eaton-Dikeman Company as chemist from 1929 to 1944 and as sales manager from 1944 to 1947. He will cover the entire eastern area from Maine to Florida for the Rochester Company making his headquarters at 41 Park Row, New York City beginning November 3rd.

Son to Continue Work Of George F. Hardy

NEW YORK—The partnership name of George F. Hardy & Son is to be continued in active existence by the late George Hardy's son, John A. Hardy. The organization which had been built up so carefully over many years will continue with the work on which it has been engaged.

Consolidated Honors Firemen and Drivers

WISCONSIN RAPIDS, Wis.—Firemen and truck drivers of Consolidated Water Power and Paper Company were honored by the company at a banquet at program October 19 at the Elks club. More than 180 members of the two groups and their wives from Consolidated's divisions as well as Ahdawagam Paper Products Company were present.

George Nelson, safety director, praised the groups for their achievements, and George W. Mead, Consolidated's president, presented certificates and safety award pins to the truck drivers. The one-year recognition for safe driving went to T. C. Curran, Wisconsin River division; Alois Van Ert, Carl Fischer, Otto Lusechow and Harvey Krueger, general; two-year award, to Clarence Rehman, Plastics division; six-year awards, Ed Saeger, Fred Giese, George Lundquist, John Henke and Walter Panzer, between-division drivers.

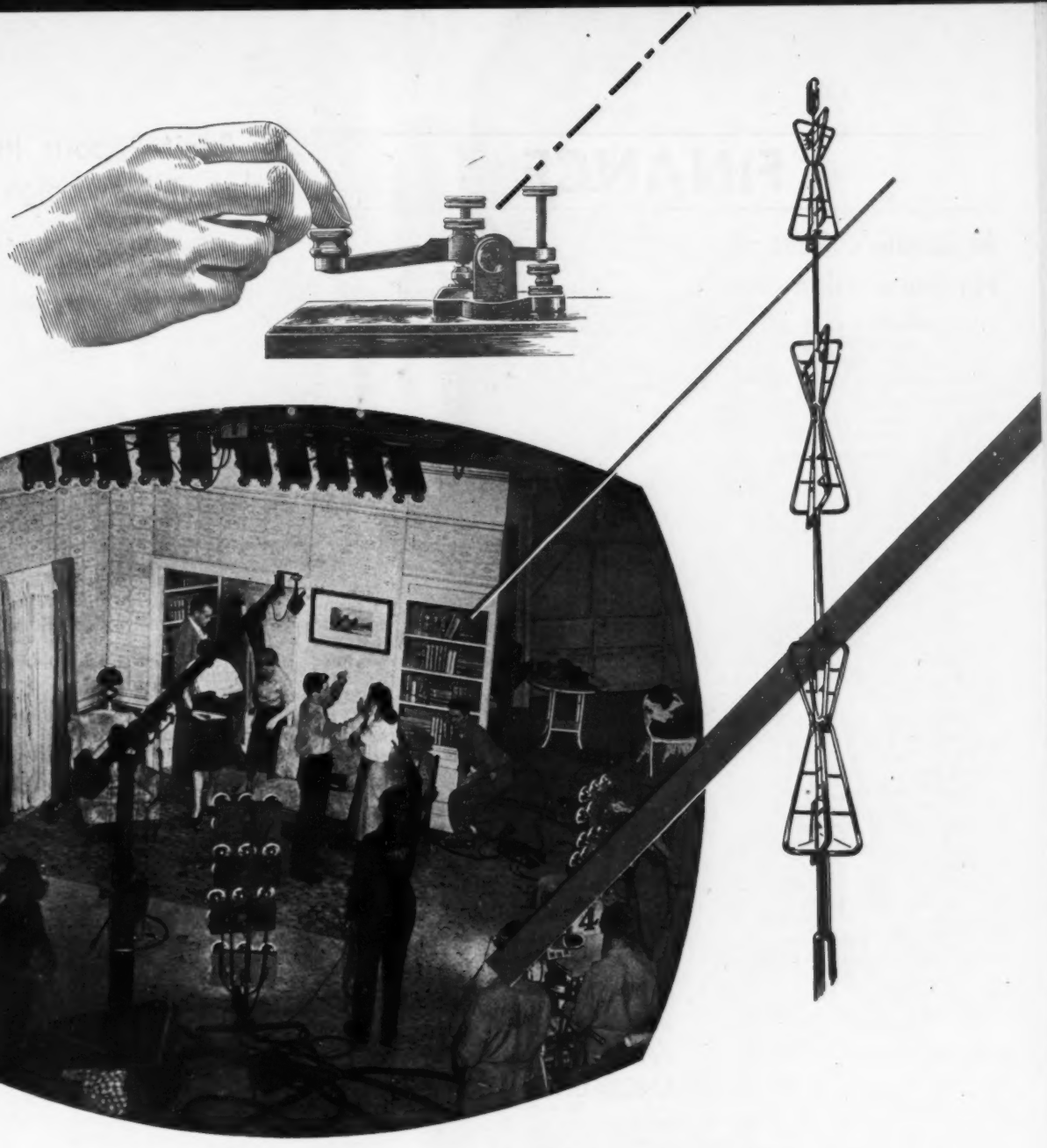
L. J. Barrette, personnel manager and master of ceremonies, introduced Mr. Mead, who praised both groups for their records. I. F. Statz, Madison, supervisor of fire prevention for the safety department of the Wisconsin Industrial Commission, gave a talk and demonstration of the dangers of gasoline and other inflammable liquids as well as other fire hazards in the home. He pointed out among other things that one gallon of gasoline has the explosive quality of 84 pounds of dynamite. He also stressed the hazards of faulty wiring in the home and urged the women present to remember that nail polish remover is a highly explosive agent and should not be used near a flame or lighted cigarette.

Additional guests at the banquet included mill managers and other officials, men of the safety department, chiefs of the division fire brigades, and garage mechanics.

Water Shortage Looms In Wisconsin Valley

WAUSAU, Wis.—Reservoirs of the Wisconsin Valley Improvement Company on the upper Wisconsin river were filled to less than a quarter of their capacity on Sunday, October 19. The Eau Pleine reservoir was drawn upon for a total of 178 million cubic feet of water during the week ending on that date.

The total storage in all the reservoirs on October 19 was 5,232 million cubic feet, the lowest water storage in the last 10 years. On the same date last year, there were 10,326 million, and 12,118 million cubic feet in 1945. The Eau Pleine reservoir contained 2,204 million cubic feet on October 19, as compared to its total capacity of 4,551 million cubic feet.



look what happened to "sparks"

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FINANCE

Masonite's Records Hit New High Marks

CHICAGO—New high records in production, sales and earnings were set last year by Masonite Corporation. This is disclosed in the company's annual report, covering operations in the fiscal year ended Aug. 31, which was mailed to stockholders last week.

Net earnings of $4,381,142 were equal to $7.30 a share, with 600,000 shares of common stock outstanding, compared with $2,203,439 and $3.67 in the previous year, when preferred stock dividends of $157,500 also were paid. The preferred was retired in October, 1946.

The report showed that federal and state income taxes amounted to $3,032,000, equivalent to $5.05 a share, compared with $3.77 a share in the previous year. Deductions for depreciation and depletion and for amortization of patents aggregated $460,196.

Net sales increased to $25,338,958, rising from $16,448,340 in the preceding year.

Eugene Holland, president, said most of this 54 percent increase was made possible by greater production of pressed wood fiber hardboards at the company's Laurel (Miss.) plant, which operated 24 hours a day and seven days a week during the last year. The plant closed down only for six holidays. He also pointed out that sales in the previous year had been affected adversely by an eight-week strike at the Laurel plant.

Dividends of $1,200,000, or $2 a share, were paid by Masonite. These included the regular quarterly payments of 25 cents a share and an extra dividend of $1. Earnings of $5.30 a share were retained in the surplus account.

Wages and salaries amounted to $7,597,535, an increase of $2,697,247 over the previous year. In the last year the number of employees rose from 2,352 to 3,037.

Capital expenditures for additions to plant, equipment and timberlands and for the improvement of existing facilities totaled $2,570,181, equivalent to $4.26 a share.

Scott 9-Month Earnings Up by 50 Per Cent

CHESTER, Pa. — Scott Paper Company reports that, after provision for preferred dividends, consolidated net earnings of the company for the nine months ended September 27, 1947, were $1,876,874, equivalent to $2.15 per common share based on the 871,847 shares outstanding. This compares with $1,160,594, for the corresponding period ended September 28, 1946, equivalent to $1.37 per common share based on an average of 846,026 common shares outstanding during the period.

Thomas B. McCabe, president of Scott Paper Company, stated that the cost of products sold for the nine months ended September 27, 1947, includes a charge of $672,000 accumulated since January 1, 1947, to equalize over the calendar year 1947 the known and estimated costs of wood pulp and other major supplies.

St. Regis Reports Its Sales at New High

NEW YORK—Resumption of quarterly dividend payments on the common stock of the St. Regis Paper Company was disclosed last week by Roy K. Ferguson, president, following a meeting of the board of directors. A regular quarterly dividend of 15 cents per share, plus an extra of 10 cents, payable December 1 to stockholders of record November 7, was authorized by the directors.

Sales of the company and its subsidiaries for the nine months ended September 30 reached $103,953,481, as compared with $56,438,324 for the same period in 1946. Net profit from January 1 to September 30 this year amounted to $11,055,144, almost three times greater than the $3,775,622 earned in the like period of last year, according to the figures made available after the board meeting.

Sales and earnings of the company have established new highs during each quarter of this year, reflecting in important measure the additions of properties acquired during 1946, as well as increased output. In the past 12 years, under present management, assets of the company have increased over $55 million and sales have gone from less than $10 million in 1935 to an estimated $140 million for 1947. Net profit after all charges for the first 9 months was in excess of ten percent of sales.

This is the first dividend paid on the common stock since 1931. The company has averaged a net profit after all charges of 5.89 percent on sales in the 12-year expansion period since 1935, but it has been the policy of the present management to put

FINANCIAL RECORD OF THE WEEK

New York Stock Exchange

High, Low and Last for Week Ending October 25, 1947

STOCKS

	High	Low	Last
A. P. W.	6	5¾	5⅞
Armstrong Cork Co.	53⅛	51⅝	51⅜
Armstrong Cork Co., pf.	102	100	100
Celotex Corp.	29⅜	27½	27⅞
Celotex Corp., pf.	20⅞	20½	20¾
Certain-Teed Products Corp.	19¼	18¼	18⅝
Certain-Teed Products Corp., pf.	....	....	....
Champion Paper & Fibre Co.	25⅞	24⅜	24⅜
Champion Paper & Fibre Co., pf.	106	105½	106
Congoleum Nairn Co.	32⅝	31⅛	31⅛
Container Corp. of America	45	43⅝	43¾
Container Corp. of America, pf.	101½	100½	101½
Crown Zellerbach Co.	34¾	33	33
Crown Zellerbach Co., pf. 4.20	102½	100⅝	101
Crown Zellerbach Co., 4 pf. 4	130	122⅜	123
Dixie Cup Co.	40	38¾	38¾
Dixie Cup Co., A	54	53¼	54
Flintkote Co.	39½	37½	37¾
Flintkote Co., pf.	107	107	107
Robert Gair	10¾	10¼	10½
Robert Gair, pf.	20	20	20
International Paper Co.	59⅜	57½	57⅛
International Paper Co., pf.	101	100	100
Johns-Manville Corp.	46	44⅛	44¼
Johns-Manville Corp., pf.	123½	123½	123½
Kimberly-Clark Corp.	24⅝	24⅛	24¼
Kimberly-Clark Corp., pf.	110	109¼	110
Mac Andrews & Forbes	39	37¾	39
Mac Andrews & Forbes, pf.	136¼	135	136¼
Marathon Corp.	25⅞	22	22½
Mead Corp.	23⅜	22½	23
Mead Corp., pf. 4¼	93½	93	93
Mead Corp., pf. 2	49½	49	49½
National Container Corp.	15⅜	14¾	14⅞
Paraffine Companies, Inc.	73	71¾	71¾
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	29⅛	28⅜	28⅜
Rayonier, Inc., pf.	36⅞	36	36⅜
Ruberoid Co.	68¼	66⅜	66½
St. Regis Paper Co.	12	11¾	11¾
St. Regis Paper Co., pf.	93	91	91½
Scott Paper Co.	47	46⅜	46⅜
Scott Paper Co., pf.	99⅜	98	98½
Sutherland Paper Co.	43	41¼	41¼
Union Bag & Paper Corp.	36⅝	34¾	34⅞
United Paperboard Co.	17¼	16¼	16¼
United Wallpaper	7½	7	7
United Wallpaper, pf.	41¾	41¾	41¾
U. S. Gypsum Co.	105½	104	104
U. S. Gypsum Co., pf.	....	....	....
West Virginia Pulp & Paper Co.	47	45½	45½
West Virginia Pulp & Paper Co., pf.	111	110⅞	111

BONDS

Celotex Corp., 3¾s '60	103	103	103
Certain-Teed Products Corp., 5½s '53	....	....	....
Champion Paper & Fibre Co., 3s '65	101	101	101
Mead Corp., 3s '68	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending October 25, 1947

STOCKS

	High	Low	Last
Great Northern Paper Co.	46¾	45½	45½
Taggart Corp.	10½	10½	10½

BONDS

American Writing Paper Co., 6s '61	....	....	....

IF YOU'RE SEEKING SAVINGS

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If rocketing construction costs have brought you budget problems, let Koppers pressure-treated wood solve them. In applications from foundations to roof decks, it brings *present savings* in building costs—*future savings* through long, trouble-free life and low maintenance.

PERMANENT FOUNDATION WORK. Koppers pressure-creosoted piles provide high load-bearing capacity at low cost. Preservative treatment permits cut-offs to be safely made above water table.

ROT-RESISTING FLOORS. A wood floor or sub-structure on or near the ground faces a decay threat. Koppers pressure-treated wood gives dependable protection against this hazard.

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FIRE-RETARDANT FRAMING. Koppers fire-retardant treatment, applied to vulnerable building members, gives a high degree of protection against fire, dependable resistance to decay and insect attack as well.

DECAY-DEFYING ROOFS. Wherever humid atmospheres create a decay hazard, Koppers pressure-treated wood provides essential protection for long dependable service.

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earnings back into plant modernization and expansion.

"The development program started in 1936 is nearly completed," Mr. Ferguson stated. "Plants have been modernized. Equipment has been installed for more efficient operation and for the diversification of products. Demand for the company's products is at capacity levels. Labor relations continue good. Our technical position is favorable. Our financial structure has been properly revamped to meet the requirements of our expanding operations. We have increased our timber holdings to insure adequate supply of basic raw material on a long term basis."

Adding to its already large southern holdings, St. Regis recently acquired the rights to manage and utilize 208,000 acres of long leaf and slash pine in Georgia's Suwannee Forest for a 60-year period. Such Southern holdings insure an adequate supply of raw material to carry on production. Pulpwood from Suwannee and the surrounding area can provide sufficient raw material to support a daily production of 750 tons of pulp and paper.

Within the past year the company has acquired important new properties. Notable among these is the Florida Pulp & Paper Company at Pensacola, and an interest in a new 250-ton kraft mill under construction by the Alabama Pulp & Paper Company adjacent to the Florida Company's site. This mill is expected to come into production early in 1948. The combined outputs of the Florida and Alabama companies' mills are being made available to St. Regis for multiwall bags and the company is now constructing at Pensacola the largest multiwall bag plant in the world. Earlier in the third quarter plans were published of a $6 million kraft paper mill and multiwall bag plant to be constructed at Tacoma, Washington, adjoining the company's present sulphate pulp mill.

St. Regis has pioneered the development of strong, lightweight groundwood printing papers for publication, mail order catalogue, directory and converting uses. Originally organized 48 years ago for the production of newsprint, the company was forced out of this segment of the industry about 1923 by migration of the newsprint industry to Canada where production costs were lower. Today, the company is a major producer of groundwood papers, supplying an impressive list of well known publications, and furnishing paper for the majority of the telephone directories east of the Rockies. St. Regis' production accounts for a substantial part of the country's entire output of groundwood paper.

An important part of the 12-year expansion program has been the intensive development of multiwall paper bags. Management early recognized the vast potential demand for multiwalls for the packaging of a long and diversified list of commodities. This division of the business has grown from under four million dollars to over $60 million, serving numerous basic industries. Well over 400 commodities are now being packed in multiwalls. Principal among these are rock products, non-metallic minerals, dry chemicals, food and agricultural products, including fertilizer. An integral part of the multiwall development is the Engineering and Machine Division, which builds to specifications bag making and bag filling machines. This enables St. Regis to offer manufacturers complete packaging systems, and has contributed notably to its leadership in the multiwall paper bag field.

In its vigorous branching out into profitable specialties, the St. Regis Paper Company has recognized the great future for plastics. The company has increased its production of Panelyte, a structural laminated plastic largely made with a kraft paper base. Today, Panelyte is used by most of the country's leading manufacturers of refrigerators, and finds many applications in the automotive, chemical, electrical, radio, furniture and railroad industries.

St. Regis now controls over 1½ million acres of forest in fee and nearly one-half million acres of cutting rights. The company keeps abreast of all developments in forestation practices, with the goal of sustained yield to insure future supply. Timber lands strategically located adjacent to each of its large mills give St. Regis remarkably close integration between forest and product. The company is not only one of the largest producers of pulp and paper tonnage in the United States but has, perhaps, the highest percentage of conversion of any major paper company.

St. Regis now owns and operates 43 mills and plants in North and South America. According to Mr. Ferguson the company plans to devote more and more attention to research and new product development, stressing technical means for improving all products and lowering production costs.

Great Lakes Operations To Be Expanded

TORONTO—The current rate of operation of Great Lakes Paper Company justifies the recently announced dividend on the common stock of 25 cents, plus 15 cents extra, President Hon. W. Earl Rowe informed shareholders.

"It will be our policy that future distributions shall be as large a proportion of the earnings as the operations and financial position of the company permit," he stated.

The company plans considerable expansion in 1948, Mr. Rowe said. In the past, expansion has been financed largely out of earnings. A considerable portion of the cost of 1948 expansion, however, has been provided for by issuance of additional long-term bonds.

Continental Can Net More Than Doubled

NEW YORK—Consolidated net earnings of Continental Can Company in the twelve months to September 30 were $10,848,346, equal after preferred dividends to $3.26 a common share, the company reports. The amount of net applicable to common stock was $10,285,846.

This compares with earnings of $4,730,233 applicable to the common in the preceding twelve months, equal to $1.65 a common share. In the twelve months to June 30, 1947, the net available for the common was $8,677,540, or $2.75 a common share.

Consolidated profits before depreciation, depletion and income taxes for the currently reported twelve-month period amounted to $22,563,634, compared with $11,239,205 earned before such charges in the twelve months ended September 30, 1946.

For the twelve months ended September 30, 1947, a total of $5,413,508 was deducted for depreciation and depletion, and $6,301,780 to cover the estimated amount required to be added to the reserve for income taxes. Earnings for the current period are based partly on estimates and are subject to current year-end adjustments.

Chesapeake Corp. Reports Ten Weeks Net Doubled

WEST POINT, Va.—The Chesapeake Corporation of Virginia, last week reported a net profit of $2,559,183 from its paper milling activities for the ten four-week periods ending October 5, 1947.

"The profit, computed after provision for Federal and State income taxes had been made, is equal to $5.53 each on 462,665 common shares compared to $2.18 a share in the same period in 1946," it was stated.

Marathon Declares Dividends

ROTHSCHILD, Wis.—Directors of the Marathon Corporation last week declared quarterly dividends on both the common and preferred stock of the company. The common dividend of 25 cents is payable November 20, 1947, to stockholders of record October 31, 1947. The regular preferred dividend of $1.25, after payment of Wisconsin Dividend Privilege Tax, will be paid January 2, 1948, to stockholders of record on December 20, 1947.

Sutherland Net Rises

KALAMAZOO, Mich.—The Sutherland Paper Company reported a rise in net income in the nine months to September 30. Net in that period amounted to $1,754,610 as compared with $1,144,762 in the first three quarters of last year. On the basis of 344,000 shares of common stock outstanding, net was equal to $5.10 a share this year as compared to $3.32 a share last year.

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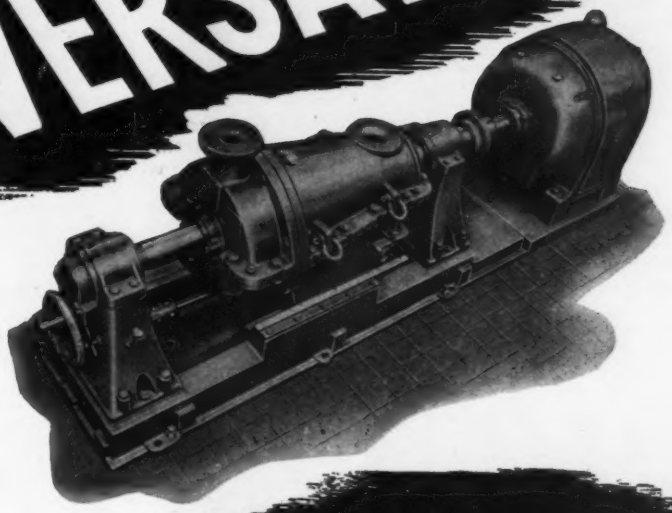

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MANUFACTURERS AND DISTRIBUTORS IN CANADA WATEROUS LTD., BRANTFORD, ONT.

New Brunswick Discusses Projected Newsprint Mill

TORONTO—Canadian newsprint manufacturers and pulp and paper people generally are watching with interest developments in the proposal of a group of United States publishers to build a 1,000-tons-a-day newsprint mill in New Brunswick. Reports of the first meeting of the publishers with Canadian promoters headed by a Canadian firm of consulting engineers vary widely. A second exploratory meeting, it is understood here, is to be held at the Biltmore Hotel in New York on Tuesday of the coming week. It is understood that a final decision as to whether or not the proposal could succeed might be arrived at during the scheduled meeting.

"New Brunswick is definitely interested in any proposal to fully manufacture forest resources within the province," Premier John B. McNair informed *The Financial Post* last week and the chairman of the provincial Resources Department Board, Dr. H. J. Rowley, is sitting in on the New York meetings discussing the proposal. The provincial government, however, has made no commitments to date, according to advice from Fredericton. E. C. Atkinson, Fredericton lawyer, who is one of the mill promoters, along with F. C. Bagley, of Augusta, Me., told *The Post* this week that the provincial government will not be asked to back any bonds or dementures. But the province, he said, had "signed on the dotted line" to indicate its "wholehearted support." What it "signed" was not revealed.

Lepreau, a small village in Charlotte county, N. B., with a harbor 90 feet deep at wharf's edge, has been prominently mentioned as a possible site for "the largest newsprint mill in North America," but this Mr. Atkinson declined to confirm. Stadler, Hurter & Company, Montreal, is the consulting engineering firm mentioned.

Early reports were that the enterprise might be organized as a co-op to take advantage of special tax concessions. This week some doubt has been expressed as to whether this would be allowed. If it were permitted, the same opinion adds, the company would pay at least 3 percent on its net after payment of interest on borrowed money.

The cost of building a 1,000-tons-a-day newsprint mill at this time would undoubtedly exceed the usual per-ton estimates by a considerable amount and in addition to this allowances would have to be made for woodlands developments and townsite. Power would be another costly expense, as it has been officially estimated that the proposed mill would require 100,000 horsepower and no hydro-electric power is available at the mentioned location. Construction of a steam-electric plant would be necessary.

Ewart Atkinson, prominent lawyer, former member of N. B. legislature (defeated in 1935 general elections), former president of Fredericton Board of Trade and long engaged in major pulp trade operations in the province, gained some notice at recent meetings in Toronto between a committee of the U. S. Congress and Canadian newsprint interests. Rev. John P. Randall, representing the Catholic Press Association, of New York, said a New Brunswick agent had recently offered for sale 100 tons of newsprint at $400 a ton. Pressed to identify the man, he said it was Mr. Atkinson.

The Export-Import Bank has been mentioned as a possible source of funds to finance the undertaking. A recent statement of Sen. Alexander Wiley (Rep., Wis.), is the basis of this thought. Sen. Wiley is reported to have said "ample credit" should be extended foreign sources of newsprint. He made public a letter to the Bank stating, it is reported, he had been advised $20 millions of credit had been granted Finland to bolster lumber and paper production for export.

"I well recognize that Canada supplies 78 percent of American newsprint and Newfoundland 5 percent," the senator was reported as saying. "These countries . . . have always been comparatively excellent risks. Anything the Export-Import Bank can do along this line would be in full accordance with the policies of sound credit of your institution."

Sen. Wiley is also said to have made public a letter from the Bank's Acting Chairman Herbert E. Gaston, stating that "Newsprint is one of the imports which it is desirable for us to encourage in our lending policy."

While there is no indication that the promoters have approached the Bank directly, it is assumed that this is a distinct possibility.

Small Business Group Would Provide Cushion

WASHINGTON—Modification of Federal tax policies to provide for a $25,000 exemption on undistributed earnings, and for averaging business income over a period of five to eight years, for income tax purposes, was urged by the Small Business Advisory Committee of the Department of Commerce, in a report by the chairman, Ross Stewart, of Houston, Texas, to the Secretary of Commerce.

Another part of the report expressed the committee's disapproval of any commercial standards and Government procurement specifications that allow only one or two suppliers to conform with such requirements.

National Gypsum Has Its Record Quarter

BUFFALO, N. Y.—With sales reaching a new high for any quarter in the company's history, net profit of the National Gypsum Company for the quarter ended September 30 increased to $1,210,314, equal to 65 cents a share, President Melvin H. Baker reported. This compared with $1,114,824, or 62 cents a share, for the quarter ended September 30, 1946. The record September quarter sales of $13,087,261 compared with $10,339,438 in the same third quarter last year.

For the nine months ended September 30, the company's net profit was $3,741,760, equal to $2.04 a common share, contrasted to $2,842,042, or $1.55 a share, in the corresponding nine-month period last year. Sales in the latest nine-month period totaled $37,085,730 compared with $26,397,143 in the same period of 1946.

"With current plant expansion nearing completion, additional tonnage of products is beginning to reach the markets throughout the country," Mr. Baker said in the report to stockholders. "Demand, however, continues in excess of production facilities."

Wisconsin County Forests Come Back in Production

MADISON, Wis.—County forests, comprising thousands of acres, a large part of which were abandoned as worthless less than a generation ago, are producing constantly increasing marketable timber. There are nearly two million acres in these forests.

During the last fiscal year county forests in 21 counties produced a record of 75,413 cords of wood and timber, according to Fred G. Wilson, superintendent of cooperative forestry. Slightly more than 46,000 cords of pulpwood were included in this total.

Cutting in the county forests has been extremely conservative, Wilson pointed out. Cutting could have been quadrupled without harvesting more than the annual growth, some estimates say.

Container Corp. Sales Rise Nearly 50 Per Cent

CHICAGO—Both earnings and sales of the Container Corporation of America improved in the September quarter from year ago figures. Net income in the three months to September 30 rose to $2,337,973, compared with $2,110,557 in the third quarter of 1946.

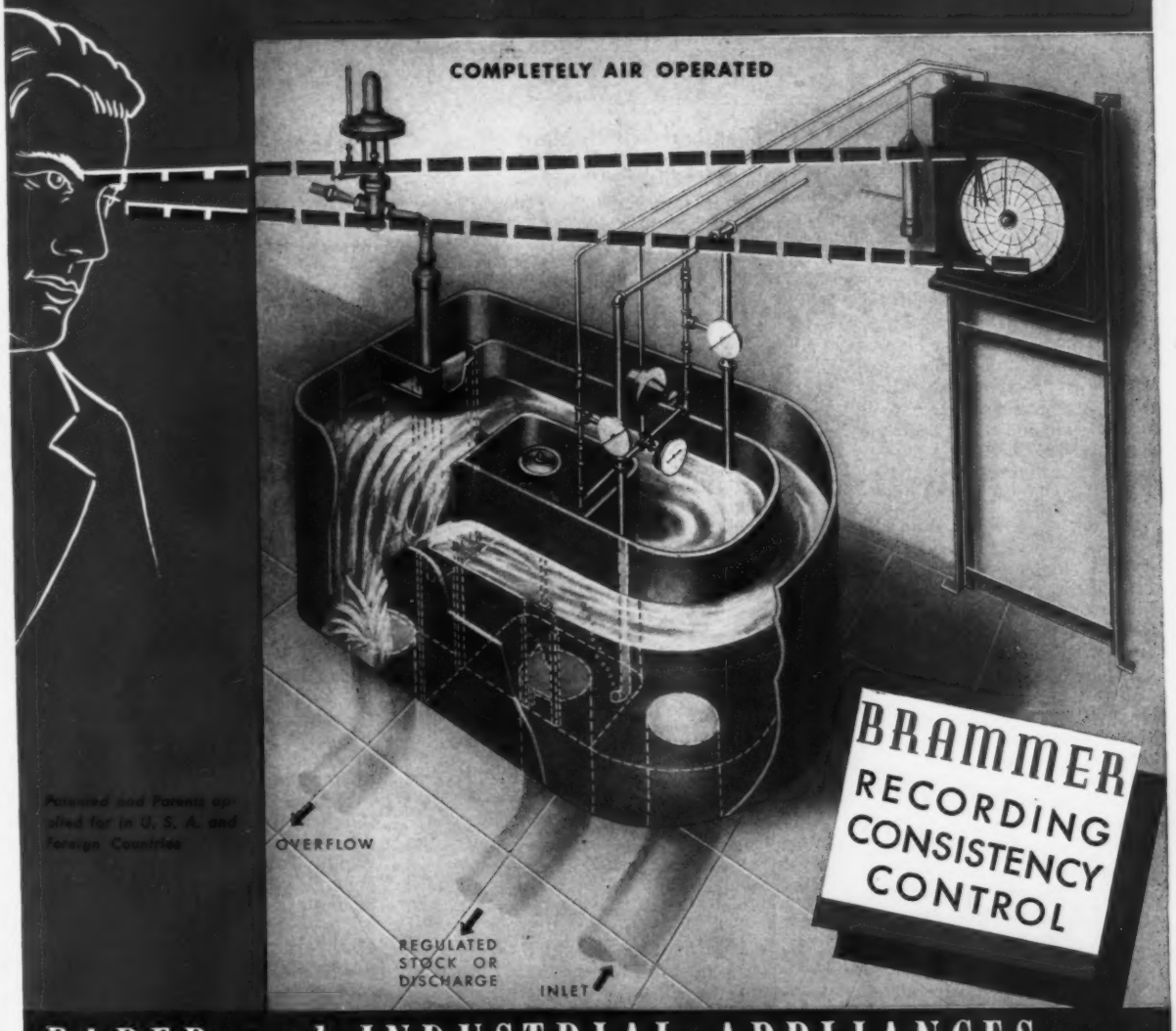
Consolidated net sales in the period were reported to have risen to $31,577,893 as compared to $22,283,135 in the same period of 1946. In the nine months to date, net amounted to $8,002,641 or $7.90 a share, against $4,803,103 or $4.85 a share in the first three quarters of last year. Consolidated net sales reached $95,039,814, compared with $62,999,135 a year earlier.

Seeing is Knowing

You see and know that the Regulator is regulating. The accurate, daily 24-hour record, charted by the Brammer Control, tells instantly and continuously the consistency of the incoming stock and of the regulated outgoing stock. Consistency adjusted by simply turning a knob. These features are exclusive with the Brammer and pay satisfactory dividends from the start.

Flow Box designed to meet specific requirements of each installation. Built of either stainless steel or wood, it insures: constant level supply to trough; constant head on proportioning gate; return of excess unregulated and regulated stock to chest, and a thorough mixing of stock and diluting water. Adaptable to metering systems.

Scores of mill operators and engineers are realizing the many advantages which the Brammer offers. Why not you? Yours for the asking—our 16 page catalog describing its operation, advantages and applications.



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Paper Group Hears Machinery Program

CHICAGO—One hundred and twenty-five members and guests of the Chicago Professional Paper Group met at the Chicago Bar Association dining rooms on October 20 to hear a most interesting and informative program on new developments in paper making and converting machines. In general, the enthusiastic group under the leadership of Joe Kubicka, president, Container Corporation of America, learned that paper making and converting machinery was being produced in a little better quantity and that prospects are fair for a continued stepping up of production as parts bottlenecks are beginning to diminish. They also learned a lot about the developments in machinery—some virtually revolutionary—which are doing a great deal to speed up the production which the entire industry is continually striving for to meet widespread increases in demand.

The first speaker of the evening was C. R. Whipple, sales engineer of the Beloit Iron Works, who presented a splendidly balanced discussion of developments in the paper making machinery field and who stayed away from over-technical comments to the point where those not acquainted with the problem got a good working idea of what was going on in this field. Mr. Whipple distributed literature to the audience to illustrate his points and spent a considerable amount of time discussing processes which now permitted tremendous increases in production. He indicated that one board machine had been developed which would turn out 600 tons of board in twenty-four hours.

The second speaker, Ren R. Perry, Western district manager of Harris-Seybold Company, likewise used literature to discuss latest developments in the power paper cutter field, while Horace C. Baker, Hudson-Sharp Machine Company, did a good job of describing the outlook for paper processing machinery and in relaying plans within the industry for new processing machinery to meet the high geared current pace of the trade. The final speaker, E. E. Ferguson, of Shartle Brothers, received the most questions from the floor as he described developments in the machine paper converting industry and painted a fairly optimistic picture of the way in which his branch of the trade was trying to step up production through new adaptations and new inventions.

All speakers participated in the question and answer period which has come to be one of the popular features of the Paper Group monthly programs.

The November 17th meeting of the Group will feature a most interesting and informative talk by a well-known trouble-shooter of the printing and lithographing industries; namely, Mr. Robert F. Reed, research director of the Lithographic Technical Foundation, Inc., of Chicago.

Mr. Reed will discuss the fundamental difficulties of paper and their relationship to printing, processing, and final use requirements. He will analyze various problems in paper handling, storage and conditioning, as well as related troubles in printing and in the fabrication of the printed article.

Mr. Reed's wide experience in the printing and lithographic fields amply qualifies him for this task, as many of the difficulties encountered in one field have their counterparts in the other printing processes and in finishing and fabricating operations.

Dinner will be served at 6:30 p.m., in the main dining room of the Chicago Bar Association, 29 South La Salle Street, Chicago, and the program will follow the dinner at 7:30 p.m.

Diamond Match Names Robert Fairburn

(Continued from page 8)

chemist of the Ogdensburg plant. Mr. Hagar succeeds Dr. R. E. Baker who has become pulp mill manager of Weyerhaeuser Timber Company, Pulp Division, Longview, Wash.

Leo N. Poccia has been appointed chief chemist of the Ogdensburg plant. Mr. Poccia has been with the company's Plattsburgh plant as chemical engineer in the development laboratory for the past year. He graduated from Clarkson College in 1942 as a chemical engineer. He succeeds Charles N. Hagar, Jr. at the Ogdensburg Plant.

SVERRE H. GRIMNES

St. Lawrence Awarded New Timber Limits

QUEBEC—St. Lawrence Paper Mills Company, Ltd., of Three Rivers, Que., and Lake St. John Power & Paper Company, Ltd., of Dolbeau, Que., affiliates of St. Lawrence Corp., Ltd., will be granted an exchange of timber limits in northern Quebec and also acquire the right to work additional forests. Premier Maurice Duplessis at his press conference last week outlined the details of the proposed switch.

For their 880,000 square miles of timber limits on the Chef River and in the Magpie River basin, the companies would receive the same area in the basins of the Mistassibi, Mistassini and Samagua Rivers, he said. The province would also be paid $173,400.

The two campanies would also pay $800 a square mile for an additional 450,000 square miles of limits in the new area. The transaction is expected to simplify the mills' operations, reduce their transportation problems and costs and provide better facilities for supervision of the new area and its protection, the Premier said.

Nekoosa-Edwards Starts New Gravity Filter

PORT EDWARDS, Wis. — Nekoosa-Edwards Paper Company will put its gravity type filter into operation this month. It is designed to handle 3,600 gallons of water a minute. The plant was planned so that additional filter beds can be installed when increased capacity is needed. The filter, drawing spring water from the company's Nepco lake, will help bleached kraft pulp at maximum brightness.

OBITUARY

Homer Stafford

WATERTOWN, N. Y.—Homer Eugene Stafford, 75, former general superintendent of the Knowlton Brothers, Inc., mill of this city, died recently.

Mr. Stafford learned the paper maker's trade in his youth, beginning his apprenticeship as a boy of 14 in the old mill of the Remington Paper company. Later, he gained experience in various other paper and pulp mills of northern New York.

He entered the employ of Knowlton Brothers in 1896 and remained with the company for 29 years, serving in various capacities until he became general superintendent, a position he held for 15 years.

For a time he was superintendent of a paper mill in Brownville. In the spring of 1926 he left Watertown for Kalamazoo, Mich., where he became general superintendent of the Hawthorne mill.

Mr. Stafford was a former vice-president of the American Pulp & Paper Mill Superintendents Association.

• PAPER—WOODPULP •

EXPORT **IMPORT**

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FLOF HANSSON INC.

NEW YORK, U. S. A.

220 EAST 42ND STREET **NEW YORK 17, N. Y.**

Tinker Holds Paper A World Commodity

(Continued from page 7)

With this amazing increase in per capita consumption over the war and post-war years our industry has had a formidable task in meeting the heavy demands placed upon it. It has had to expand to meet this demand, to meet this ever increasing annual per capita consumption. And too—the war, with our armed services in the four corners of the world, gave other nations a most complete opportunity to familiarize themselves with the products of all our industries. "Made in the U.S.A." became synonymous with quality workmanship. In a sense our military personnel were salesmen, for, of necessity, they introduced our products into many potential post-war markets.

"It goes without saying that the measure of a country's standard of living is readily discernible in its per capita paper consumption. We have the highest per capita consumption and we also have the highest standard of living achieved by any nation. The war has brought tremendous changes in all countries. There is an apparent worldwide desire to increase the lot of the common man, and many nations have already made considerable progress in sanitation, educational and industrial programs. The fulfillment of such social programs will be closely tied to an increasing paper consumption in those countries. For example, in all countries education is receiving more attention than before the war, requiring larger quantities of books and printing papers; sanitation and improved handling of food products requiring better packaging will further increase a country's paper consumption. It may be that our industry is more closely tied with these social and industrial programs in other countries than we fully realize. Many of the countries do not yet have fully developed paper manufacturing industries and must, therefore, rely upon outside sources for their paper products in order to attain a measure of success for their internal development. An analysis of our export trade tends to show that the most highly industrialized nations are our best customers, and that the growth of mass production throughout the world with a resultant increase in national income and purchasing power offers our industry a rare opportunity to develop its export trade by solidifying and expanding the markets which the war created. There are possibilities for multilateral trade based on our products. For example, a firm in the United States might ship pulp and paper to Brazil accepting payment in Brazilian cruzeiros. With these crubeiros, coffee could be purchased in Brazil for shipment to Sweden. Payment of this coffee would be accepted in Swedish kronor, which in turn could be used for purchasing wood pulp for shipment to the United States.

"Our export trade in paper and paperboard products has never been an important factor in our industry. Over the past years, exports have ranged between 200-465,000 tons annually—about 1.5 to 2 per cent of production. This percentage serves to indicate very strongly that we have never been very export minded. Admittedly, the lack of foreign exchange at the present time and for probably some time to come will be a serious handicap in developing our export trade, but nevertheless we should keep this profitable field in mind in planning for the future. The base of our foreign trade is there, and it could be tied in very constructively with our industry's expansion program, in a way that would make our world markets a permanent, ever-increasing outlet for our mills and not an overflow outlet. In our Association we have given considerable thought to exports, and have set up an Export Committee which has been actively functioning since the early part of last year. This Committee has embarked on an extensive program of world market surveys which it is making available to the industry for present and future reference. The prime purpose of these studies is to offer our industry comprehensive and statistically detailed information on potential markets and for mills to ascertain for themselves if these markets surveyed do offer good trade opportunities.

"In 1946 the estimated annual world consumption of paper and paperboard was approximately ten pounds per capita. With the industrial and rehabilitation programs going on in many countries, per capita paper consumption will rise, this increase varying country by country depending upon the intensiveness of the programs. Imagine the market that would be created if such countries as China and India were to increase their paper consumption just five pounds a year! It would mean an additional consumption of 2,500,000 tons, for those two countries have about 40 per cent of the world's population within their borders. I could go on and cite other examples, but I do believe that just this one is graphic enough to illustrate my point.

"I want to stress again what an important part our industry plays in international trade and how important international trade is to our industry. The imported products used in our industry run into the hundreds of millions of dollars annually and through these imports we create a sizeable amount of foreign exchange which is so vital in this long transition period for the world. There is an increasing interest in exports manifesting itself, and the desire to retain and expand the war-created markets is much in evidence in certain segments of the paper industry. I do believe that a well established, permanent export trade is most constructive and beneficial and should be given serious attention by our industry. If the peoples of the world would only look upon the United States less with envy and more with a strong determination to emulate our high standard of living with which free enterprise has blessed us, then we will find that the keystone of such progress will be an ever increasing consumption of paper.

"In conclusion I would like to add to my discussion of the place of the pulp and paper industry in world trade a comment that I believe will fit the thinking that is becoming more and more prevalent in official circles. It is well known that consideration is now being given to matters relating to future national defense as related to our economy. It is unthinkable that in view of the experiences of World War II planning for the future should not cover all possible exigencies. Actions that may be taken now that might result in future dependence for critical materials upon foreign sources must receive serious consideration. Within this entire structure pulp and paper are of great proven import.

"The American Paper and Pulp Association has both during the war and since the war, been actively engaged in an effort to promote maximum production. As to future production, any national defense program now receiving consideration must give thought to the ability of the industry to maintain maximum production on a self-contained basis. It is to be hoped that the experience of World War II will not be forgotten as future plans are charted. Actions that may be taken now that will force increasing dependency on foreign sources of raw materials or upon foreign supplies will be of greatest import.

"It is well known that international consideration of trade relations has been the subject of long discussions in Geneva. Press reports make it clear that the United States' position has been one of advocacy of reduction of tariffs and freer interchange of grades. I understand the Government's announcement covering agreements effectuated will be forthcoming about November 15th. In view of this situation recent Canadian announcement with respect to an embargo on wood shipments to the United States no doubt must have caused some serious reflection on the part of the negotiators."

NEPMA Enrolls Three More Members

BOSTON — Norman E. Scott, executive secretary of the New England Paper Merchants Association, discloses the enrollment of the following houses as members: Wrapping papers—Riverside Paper Company, Burlington, Vt.; Nathan Schwarz & Son, Inc., and Cascade Paper Company, North Adams, Mass. Fine papers — Pilgrim Paper Corporation, Boston, Mass., and The Gardner Paper House, Inc., Gardner, Mass.

The total membership now comprises 110 houses (excluding branch houses and/or warehouses).

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· EQUIPMENT AND SUPPLY NEWS

Honeywell-Brown Men Convene in London

LONDON—Growing volume of industrial instrument sales in Europe, and prospects for accelerated business activity as industrialization on the continent moves ahead, provided the main topic for discussion at the recently concluded meeting of foreign managers of the Brown Instrument Company and its parent organization, Minneapolis-Honeywell Regulator Company.

Holding its first international convention since the war, the company called into London managers and supervisory personnel of its five European subsidiaries to lay plans for expanded sales activity in the key market areas presently served by the Honeywell-Brown companies.

Called by Harold W. Sweatt, president, the meeting also was attended by Thomas McDonald, vice-president in charge of sales, and William Westphal, manager of the International Division, all three of whom went to Europe to help the foreign managers outline forthcoming sales and production plans abroad.

Although currency restrictions, particularly in England, currently are limiting some business operations, the growing use of industrial instruments on the continent have enabled Honeywell-Brown to greatly expand sales and service staffs, the officers stated. Holland, Belgium, Switzerland and Sweden are depending to an increasing extent on modern industrial process controls to speed production and reconversion. At the same time, Mr. Sweatt said, foreign producers are looking to the newer electronic instruments to increase efficiencies and help bring about greater exports with which to get dollar exchange. The steel mills in Belgium, as well as the oil and chemical plants with headquarters in Holland were particularly singled out as big users of industrial instruments and control systems.

In addition to the three from the United States, the following subsidiary managers attended the meeting: James Fraser, London; Charles Meech, Switzerland; A. P. Taselarr, Holland; Jack Nelson, Sweden; and Jan Amand, Belgium. Foreign staff assistants, technicians and supervisors also attended the convention.

Honeywell-Brown also operates subsidiary companies in Canada and Mexico.

Paper Chemicals Completes Plant

NEW YORK — A new chemical plant located in Jamaica has been completed by Paper Chemicals, Inc. This plant has been specifically designed and set up for the manufacture of Polyvinyl Acetate resins, Polyvinyl resin emulsions and Polyvinyl Alcohol resins.

Electric Boat Appoints Hagen in Chicago

NEW YORK—Stuart E. Arnett, sales manager of the Printing Machinery Division of the Electric Boat Company, has named Jack L. Hagen as midwestern district manager in charge of the Chicago office. Mr. Hagen was formerly superintendent of the Workman Manufacturing Company of Chicago. He was associated with the Workman company for twenty years. During this time he gained experience in all departments of the business including both offset and letterpress production, sales and accounting.

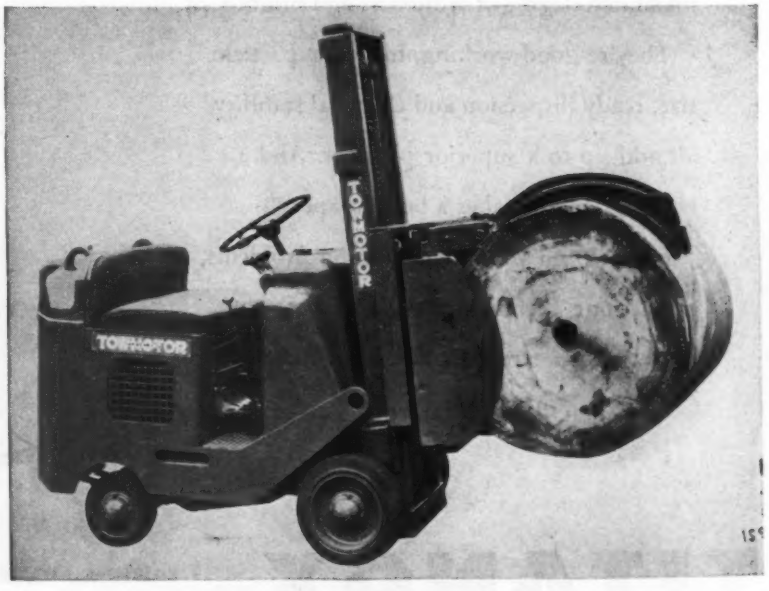
Jack Hagen is a past president of both the Chicago Litho Club and the Chicago Club of Printing House Craftsmen. He is an honorary member of the Printing Supply Salesmen's Guild of Chicago, a member of the Old Time Printers of Chicago Association and a director of the National Association of Photo-Lithographers. He attended the University of Illinois where he studied Industrial Administration.

Attachment Solves Handling Problem

An unusual combination roll-grip and upender attachment for fork lift trucks, which provides safe handling of heavy cylindrical loads, has been designed for a leading New England paper manufacturer, by engineers of Towmotor Corporation, Cleveland, Ohio, manufacturer of fork lift trucks, accessories and industrial tractors.

The combination attachment was developed in response to a request for a fork lift truck device which would be capable of picking up and stacking 1500-pound rolls of paper of varying lengths and diameters. An adaptation of the standard Towmotor upender accessory, which permits handling of heavy cylindrical loads in either horizontal or vertical position, the new attachment features a vise-like pair of curved arms which hold the load firmly and safely at all times.

One arm of the roll-grip is stationary, the other, hydraulically operated, closes securely against the roll, holding the load in any position required for traveling or stacking operations. The attachment is mounted on a standard Towmotor Model LT-40 Fork Lift Truck having a maximum lifting height of 108 inches and a capacity of 1700 pounds at 20-inch load center.



Combination Roll-Grip and Upender Attachment for fork lift trucks, developed by Towmotor Corporation, Cleveland 10, Ohio, provides fast, safe handling of large cylindrical loads in either vertical or horizontal position. One arm of the roll-grip is stationary, the other, hydraulically-operated, closes against the load in a firm, vise-like grip. Attachment is mounted on a standard Towmotor Model LT-40 Fork Lift Truck, capacity 1700 pounds at 20-inch load center, maximum lifting height, 108 inches.

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FITCHBURG MASSACHUSETTS

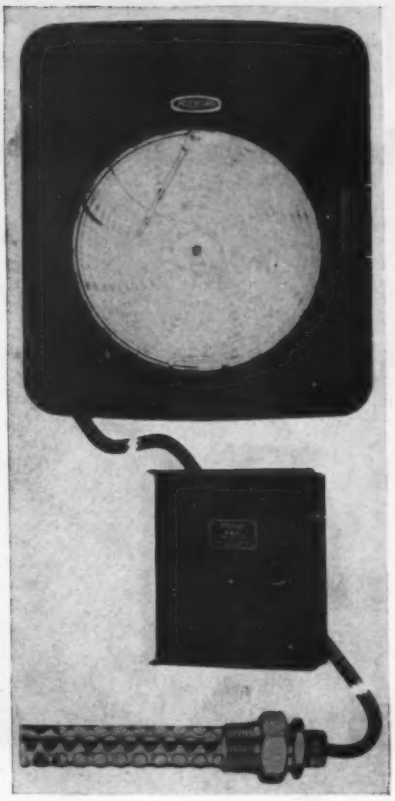
Foxboro Shows Its Dew Point Recorders

Dew Point recorders and recording controllers, said to be the first simple, continuous dew point measuring instruments available for industrial use, are the newest additions to the line of industrial instruments offered by the Foxboro Company, Foxboro, Mass. They are the result of several years of research and development and extensive field-test installations. A considerable number are already in use in such varied applications as air conditioning, blast furnace operation, a weather station, gas distribution, and storage container research work. Some of the other applications in which dew point measurement and recording is important are food processing plants, warehousing, storage rooms, refrigeration, foundry cupolas, dryers, and air fields. An exhibit of the Dew Point recorder attracted much attention at the recent meeting of the International Meteorological Organization, in Washington, under the auspices of the Weather Bureau, Department of Commerce.

The unique feature of the equipment is Foxboro's patented measuring element, the Dewcel. It has the general appearance of a perforated metal cylinder about 9 inches long and 2 inches in diameter. Within is a central tube containing the thermal bulb, wrapped with a saline-saturated woven glass tape and two windings of silver wire, to conduct the heating current. Moisture determination by the Dewcel is based on the fact that for every water vapor pressure in contact with a saturated salt solution there is an equilibrium temperature at which the solution neither absorbs nor gives up moisture to the atmosphere. The function of the variable heat supply is to bring the Dewcel to this equilibrium temperature. This temperature, measured by the thermal bulb, is transmitted to the recording instrument, and is read on the chart in degrees of dew point temperature. Recording is continuous. Various standard chart ranges are available, two of the most common being —20 to +92 degrees Fahrenheit dew point and 36 to 160 degrees Fahrenheit dew point.

Two types of recorders are offered, both of standard Foxboro design. One is the Dynalog all-electronic instrument; the other is the liquid-filled system type, in the round-form case that has been familiar in industrial uses for many years. Pneumatic or electric control systems, for the operation of valves, dampers or motors, can be supplied in either instrument. Installation is practically the same as the installing of an ordinary temperature recorder.

The important virtue of simplicity is claimed for Foxboro Dew Point recorders, since they require no refrigeration, water supply, or air circulating system, and have no mirrors to be kept clean. They can be installed almost anywhere, indoors, or outdoors. The recording instrument can be mounted in a control panel as much as 600 feet from where the Dewcel measuring element is located. Comparative cost is another aspect in which the Foxboro Recorder has a notable advantage. The initial cost of the instrument and installation is much less than that of equipment involving compressors or pumps, and operating expense is negligible, the current consumption of the Dewcel being from one to eight watts, under normal operation.



The new Foxboro Dynalog Electronic Recorder, auxiliary power unit, and Dewcel, for dew point measurement.

Sier-Bath Publishes New Pump Catalog

A revised twenty-page catalog of Sier-Bath screw pumps has been published by Sier-Bath Gear and Pump Company, North Bergen, N. J. It gives descriptions, capacities and uses of Sier-Bath internal and external types, horizontal and vertical, for pumping crude oils, bunker C fuel oils, greases, paraffins, syrups, molasses, acetates, cellulosics and semi-fluids for processing. Also includes information on horsepower ratings, viscosities, pump installation and maintenance.

DuPont Offers New Waterproof Adhesive

WILMINGTON, Del.—Waterproof adhesives of the type successfully used on paperboard containers during the war have been made available in limited quantities for industrial use. The duPont Company declares that its adhesives "77" and "78" may now be obtained in moderate quantities by concerns desiring to evaluate their possibilities under conditions of peacetime production.

Chemists of the Grasselli Chemicals Department of the duPont Company in 1943 produced an adhesive containing "Elvanol" polyvinyl alcohol and clay. The powders used were easily water soluble when cooked at a temperature of 180 to 190 degrees F., but developed remarkable water resistance under conditions of use. It was given the number "77." In 1944 a companion adhesive, called "78" was brought out. A United States patent covering the polyvinyl alcohol composition was obtained on December 31, 1946.

Adhesives "77" and "78" are available in powdered form, in 50 pound bags, and users may convert them into liquid formulations.

For civilian use, indications are that the adhesives may be of value in making paper containers for export — whether by cargo ship or air express; for boxes to be used in moist climates, or for articles in cold storage, or anywhere where moisture condensation is a problem.

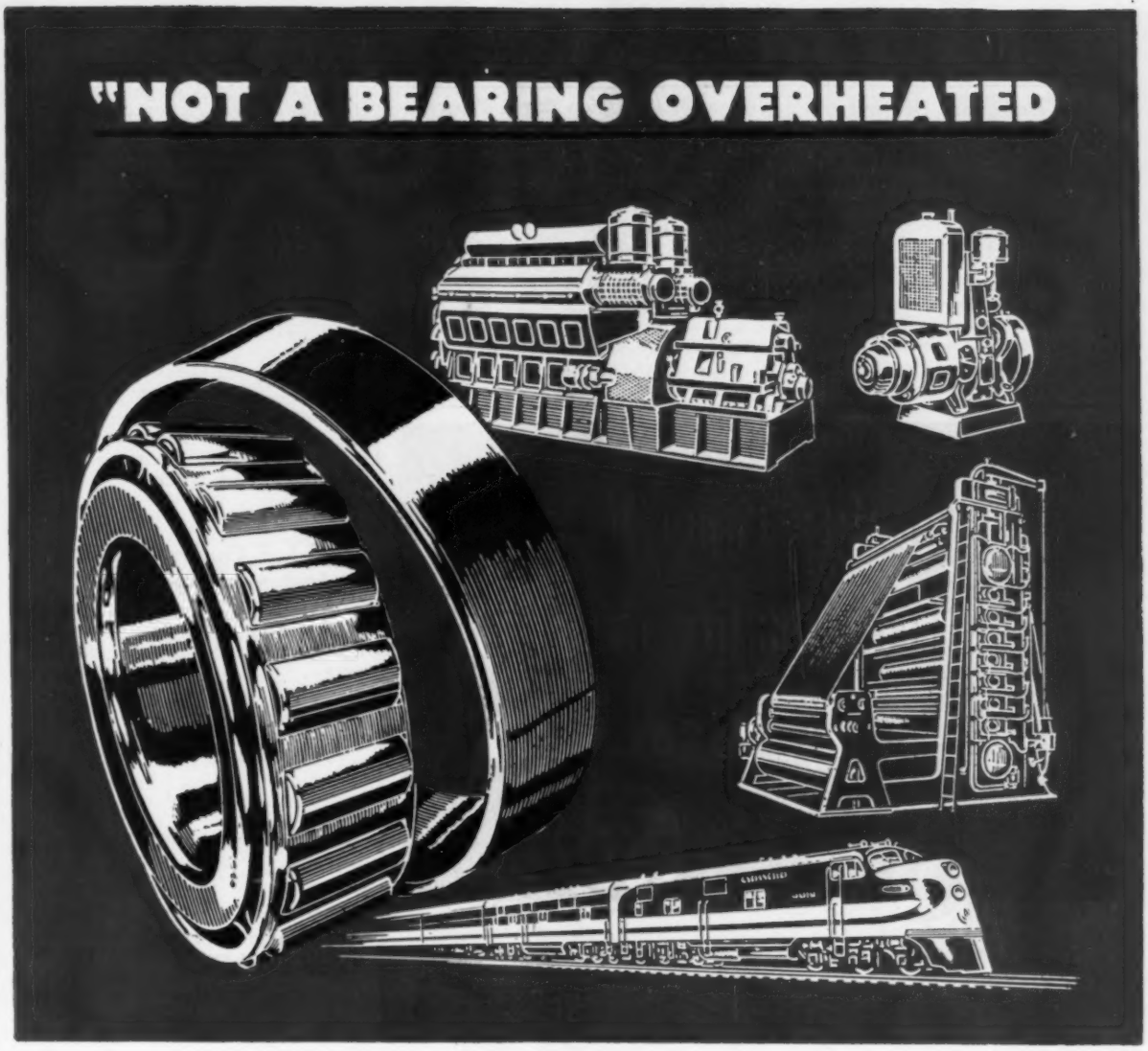
Wyandotte Chemicals Produces Sodium Carboxymethylcellulose

WYANDOTTE, Mich.—Wyandotte Chemicals is now manufacturing commercial quantities of Carbose, a technical grade carboxymethylcellulose produced by a unique process for which patents have been applied. When Wyandotte Carbose is used with certain synthetic detergents, their laundering performance equals and in many cases excels that of the best grades of soap.

Sodium carboxymethylcellulose, though long known, has only recently received widespread attention in American industry. It is the current "wonder-child" in many fields of application. Sodium carboxymethylcellulose may be deposited as a sizing on fabrics, or used as a print base. It is an adhesive, and a thickening and suspending agent and is finding application in oil well drilling muds, in paper and in paint, and in the processing of ceramic materials and the molding of plastics.

Information regarding the utilization of Wyandotte Carbose as a synthetic detergent "promoter" can be obtained by writing the Development Department, Wyandotte Chemicals Corporation, at Wyandotte, Michigan.

"NOT A BEARING OVERHEATED



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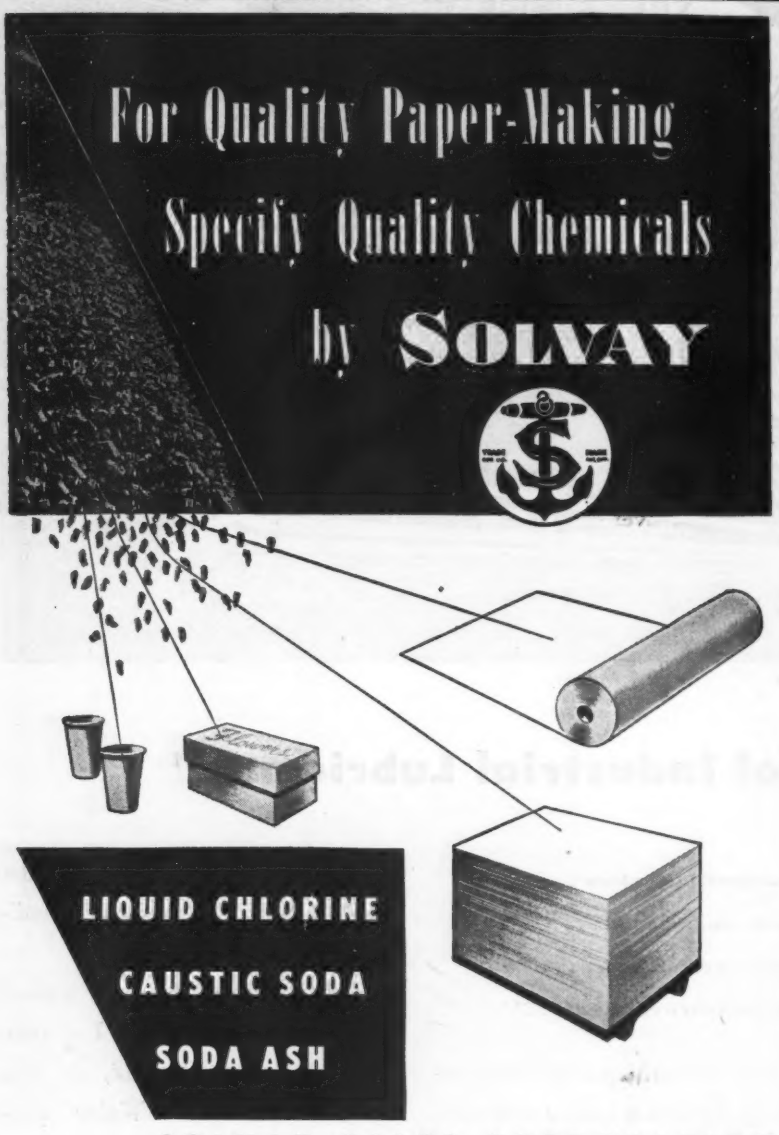
NEW LITERATURE

Booklet Describes Uformite In Wet Strength Papers

The Resinous Products & Chemical Company, Philadelphia, whose Uformite urea-formaldehyde resins provide an economical and simple way to impart wet strength to kraft, sulfite, rag and groundwood pulp stock papers, has prepared an informative booklet on the subject of synthetic resins in modern paper-making procedure.

Illustrated with story-telling photographs taken at the Savannah, Ga., plant of the Union Bag & Paper Corporation, the new booklet discusses the history of wet strength in paper and its value in such applications as waterproof maps, paper towels, bags for chopped ice, moist fruit or vegetables, frozen foods and bottled beverages.

Specific data on preparation, operating conditions, dilution of resin and broke recovery with Uformite 467, 470 and 500 are treated in detail to give a comprehensive picture of this important development that has so greatly expanded the market for paper products.



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Norton Produces Two New Films

Since the making of the Norton Company's first motion picture on the grinding of cemented carbides in 1944, there has been a great deal of development and progress in both grinding procedures and diamond wheels, with the result that this film today is somewhat obsolete. The company is now replacing this old film with two new pictures, one with the same title "Grinding Carbide Tools" and a companion film on "The Diamond Wheel, Its Care and Use." These pictures can be used separately if desired or can be used one to supplement the other.

Duplicate prints of these films have been prepared and bookings for either one or both are being made by the Norton Company, Worcester, Mass. Three to four weeks' notice is requested.

W. & L. E. Gurley Bulletins Its Stiffness Tester

A bulletin describing the new Gurley motor-operated stiffness tester has been published by W. & L. E. Gurley of Troy, New York, century-old manufacturer of scientific instruments.

The booklet illustrates how the stiffness tester can be applied in testing paper, textiles, leather, plastics, metal foil and finishings; its range and capacity and the standard size samples used.

Copies of the bulletin, No. 1430, are available on request to W. & L. E. Gurley, Troy, New York.

Automatic Backwash Rapid Sand Filter

Hardinge Company, Incorporated, York, Pa., describes in Bulletin 46, which may be obtained from the factory in York, or from any of the Hardinge branch offices, a filter which is new in principle, employing a traveling, automatic backwash mechanism which cleans the filter bed without interruption to the filtering process. Particularly adapted for purifying industrial water supplies, sewage treatment, trade waste recovery, municipal water treatment, and for raw water purification, white water filtration and waste recovery in paper mills.

De Laval Worm Gearing Bulletin

Advantages of worm gearing, AGMA service classification, bearing load formulae, quality control and precision manufacturing, selection practice, horsepower ratings, worm thread and gear tooth data for different ratios, dimensions and details of standard worm mountings, worm dimensions, gear dimensions and dimensions of standard flanged rims are described in a new bulletin issued by the DeLaval Steam Turbine Company, Trenton 2, N. J.

Wood Council's Program Centers on Lamination

SPRINGFIELD, Mass.—The lamination of wood will be the theme of the forthcoming meeting of the Northeastern Wood Utilization Council, which will be held on December 11th. The subject of lamination of both hardwoods and softwoods will be discussed from the engineering and practical viewpoint.

Among the participants will be Prof. Albert G. H. Dietz from the Massachusetts Institute of Technology, Francis W. Hagerty from the Hagerty Co., Prof. Fred Waangard from Yale, and representatives from the Tennessee Valley Authority and Gamble Bros.

The meeting is open to invited participants only, but the proceedings will be published in the regular Council bulletin series. Further information may be obtained by addressing Mr. E. L. Heermance, Secretary of the Northeastern Wood Utilization Council, P. O. Box 1577, New Haven 6, Conn.

Paper and Twine Men Plan to Have Glee Club

CINCINNATI — John L. Richey, executive secretary-counsel of the Paper and Twine Association, last week disclosed a plan to liven up gatherings of his group with community singing. His program takes the form of a Paper and Twine Glee Club, which took preliminary steps toward organizing at its meeting this week in Chicago. Formation of the chorus, program building and rehearsals have been placed in the hands of Franklyn Olsen, representative of the PAPER TRADE JOURNAL, himself a former radio singer over midwestern stations. The new group is expected to show its stuff next Spring in New York, and next June at the Association's annual meeting at French Lick Springs.

Fox Valley Engineers Hear Kimberly-Clark's Nelson

MENASHA, Wis.—The Fox River Valley chapter of the Wisconsin Society of Professional Engineers was to meet at 6 o'clock Thursday evening, October 30, at the Elks club here. After a dinner, an address was scheduled to be given by C. W. Nelson, vice-president in charge of expansion of Kimberly-Clark Corporation, who was to discuss engineering aspects of the corporation's expansion program.

Paper Mill Unions Plan To Unite in New York State

UTICA, N. Y.—The New York District Council of Paper Mill Unions held an all-day conference in the Labor Temple here. Plans to unite the unions of the state for more effective work were outlined. A dinner at Hotel Hamilton in the evening was attended by about 150 delegates. Ernest Lambton and L. R. Gagon handled arrangements. Ronald Nolan of Niagara Falls presided.

Utica Plant to Start After January 1

UTICA, N. Y. — Production in the new plant of Continental Can Company, Inc., will get under way after January 1, according to E. J. Engel, plant manager. Mr. Engel said construction is behind schedule. Meanwhile, the plant is receiving its first shipments of paper stock which are being stored pending the setting up of machinery.

Paperboard Association Plans Annual Meeting

NEW YORK—The annual meeting of the National Paperboard Association has been called to be held at the Waldorf-Astoria Hotel on November 13 and 14. A meeting of the Association's board of directors is scheduled for Thursday afternoon. General membership sessions are to be held Thursday afternoon and Friday morning.

George E. Dyke, president of Robert Gair Company, Inc., is president of the Association. W. H. Beckwith, vice-president and general manager of Morris Paper Mills, Morris, Ill., is vice-president.

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TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, October 29, 1947.

Although it is reported that supply and demand are nearing a balance in the over-all picture, supplies of some grades remain extremely tight, and others are available only on allocation by the mills. Additional capacity coming into operation will relieve the kraft market, it is reported, but no relief is seen on the tissue grades, which are very scarce. Prices of tissues are revised upwards for the fourth quarter. Market is extremely short with quantities available on allocation. . . . Scarcity of jute fibers affects prices of jute tags and jute manila which are upped accordingly. . . . Imports of wrapping paper for the week ended October 18 totaled 15 bales, 734 rolls. Demand is high and supply limited. Research and engineering to improve this situation is reported.

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WARREN PUMPS

Woodpulp

The few changes noted in domestic and Canadian mill listings do not reflect serious changes in the market, but simply a regrading to the current market. Bleached soda is scarce and where available is reported at $120 to the mills on contract. Kraft grades likewise are reclassified.

Waste Paper

The slight easing of the market noted as a result of heavy Fall collections is considered temporary, with no downward trend on prices apparent. Low grades of papers, books and magazines are moving slowly. The market is active on high grades. Corrugated is plentiful and steady. Ledgers are strong and priced high.

Circumstances of the prevailing market are such that it is difficult to get accurate prices on the various grades. While most available stock is being sold to the mills at consistent prices, there are other instances where double these prices is being paid. Our listings will therefore be limited to the base mill price reported. Grades that have disappeared are dropped from the list.

Rags

The expected rise on all grades of roofing rags amounted to $5 a ton. Demand is heavy and market firm. New cotton cuttings continue in strong demand.

Twines

Scarcities are reported on all grades of twine and no easing of the condition expected. Prices are advanced in all types. Manila, where listed, is classified "Reprocessed." Hemp varieties are "American" fibers.

Index

The index of general business activity for the week ended October 18 inclined to 143.8 from 143.0 in the preceding week, compared with 134.1 for the corresponding week of 1946. Index of paperboard production rose to 170.4 from 168.7 in the preceding week, compared with 148.1 in the corresponding week of 1946.

Paper production for the week ended October 18 was estimated at 108.3 percent compared with 108.4 for the preceding week, with 105.1 for the corresponding week of 1946, with 96.5 in 1945, and with 92.7 for the corresponding week of 1944.

Paperboard production for the week ended October 18 was 101.0 percent of capacity, compared with 102.0 percent for the preceding week, with 98.0 for the corresponding week in 1946, with 96.0 in 1945, and with 94.0 percent for the corresponding week of 1944.

IMPORTS

NEW YORK IMPORTS

WEEK ENDING OCTOBER 25, 1947

SUMMARY

Newsprint	6660 rolls
Paperhangings	2 cs.
Wallpaper	1 cs.
Drawing Paper	1 cs.
Carbon Paper	11 cs.
Wrapping Paper	2 cs.
Coated Paper	10 cs.
Parchment Paper	1 cs.
Paper Serviettes	15-cs.
Miscellaneous Paper, 6 cs., 1038 rolls	

NEWSPRINT

Times Publishing Co., Oglethorpe Victory, Antwerp, 57 rolls.

Malmar Paper Co., Oglethorpe Victory, Antwerp, 128 rolls.

Newark Evening News, Stavangerfjord, Oslo, 244 rolls.

R. A. Olsen, Inc., Donpaco, Donnacona, 371 rolls.

News Syndicate Co., International #1, Gatineau, 303 rolls.

R. A. Olsen, Inc., G.T.D., Donnacona, 376 rolls.

Aqua Shipping Co., Kermic, Donnacona, 392 rolls.

R. A. Olsen, Inc., Newscarrier, Donnacona, 339 rolls.

News Syndicate Co., Brian, Thorold, 2012 rolls.

R. A. Olsen, Inc., G.D.D., Donnacona, 370 rolls.

News Syndicate Co., Kay, Thorold, 2068 rolls.

PAPERHANGINGS

W. H. S. Lloyd & Co., America, Southampton, 2 cs.

WALLPAPER

American Express Co., De Grasse, Havre, 1 cs.

DRAWING PAPER

Lansen Naeve Co., De Grasse, Havre, 1 cs.

CARBON PAPER

All Transport, Inc., Mesh Knot, Vera Cruz, 11 cs.

WRAPPING PAPER

All Transport, Inc., De Grasse, Havre, 2 cs.

COATED PAPER

F. P. Gaskell Co., Eucadia, Glasgow, 10 cs. (for cigarette tipping).

PARCHMENT PAPER

Meadows Wye & Co., Mauretania, Southampton, 1 cs.

PAPER SERVIETTES

(———), Mauretania, Southampton, 15 cs.

MISCELLANEOUS PAPER

Meadows Wye & Co., America, Southampton, 6 cs.

N. Y. Trust Co., American Banker, London, 1038 rolls.

RAGS, BAGGINGS, ETC.

A. W. Fenton, Inc., Burbank Victory, Leghorn, 254 bls. dark cottons.

Manufacturers Trust Co., Burbank Victory, Leghorn, 187 bls. dark cottons.

Continental Bank Trust Co., Hobart Victory, Venice, 171 bls. dark cotton roof rags.

(———), Hobart Victory, Venice, 277 bls. dark cotton rags.

Brandwein Mazur Co., Scott E. Land, Bombay, 200 bls. cotton waste.

Continental Bank Trust Co., Scott E. Land, Alexandria, 162 bls. old bagging.

National City Bank, Scott E. Land, Alexandria, 401 bls. old bagging.

Darmstadt Scott & Courtney, Scott E. Land, Alexandria, 254 bls. old bagging.

Castle & Overton, Inc., Scott E. Land, Alexandria, 80 bls. old white cotton rags.

(———), Scott E. Land, Alexandria, 46 bls. old white cotton rags.

A. W. Fenton, Inc., Scott E. Land, Naples, 170 bls. dark cotton rags.

E. J. Keller Co. Inc., West Linn Victory, Antwerp, 69 bls. old bagging.

A. W. Fenton, Inc., Rossia, Naples, 285 bls. old dark cotton rags.

1st National Bank Chicago, Marshal Govorov, Leningrad, 503 bls. used cotton bagging; 300 bls. cotton pickings; 7686 bls. cotton linters.

Amtorg Trading Corp., Marshal Govorov, Leningrad, 1897 bls. cotton waste.

GLUESTOCK, ETC.

Transatlantic Animal By-Products Corp., Temaraire, Hong Kong, 150 bags hide glue.

C. H. Powell, Mesh Knot, Vera Cruz, 139 bls. gluestock.

John Gorvers, Cape Isabel, Barranquilla, 64 rolls hide cuttings.

H. Remis, Cape Isabel, Barranquilla, 205 rolls dry splits.

WOODPULP

The Borregaard Co. Inc., Stavangerfjord, Oslo, 200 bls. dry bleached sulphite pulp.

CASEIN

National Casein Sales Co., Mormacswan, Buenos Aires, 2032 bags (lactic).

National City Bank, Wilhelmina, Buenos Aires, 1000 bags (ground lactic).

BALTIMORE IMPORTS

WEEK ENDING OCTOBER 25, 1947

Paper Clearing House, West Linn Victory, Antwerp, 19 rolls newsprint.

NORFOLK IMPORTS

WEEK ENDING OCTOBER 25, 1947

E. J. Keller Co. Inc., West Linn Victory, Antwerp, 121 bls. old bagging.

A. de Vries Trading Corp., West Linn Victory, Antwerp, 44 bls. old waste bagging.

Fowler Expresses Concern At Freight Car Shortage

(Continued from page 7)

products, and to be the keystone of an expanding Canadian economy.

Other statistics quoted by Mr. Fowler indicated that Canada's pulp and paper industry accounted for 45 cents out of every dollar which this country has received for exports to the United States during the first eight months of this year. Total exports to U. S., excluding gold, in that period, totalled $645 millions. Of that amount, pulp and paper exports totalled $293 millions or 45 1-3 per cent. Newsprint alone produced $188 millions or 29 per cent.

Exports, however, are only part of the pulp and paper industry's contribution to the Canadian economy, he pointed out. Expenditures made by the industry within the country are also important. Last year, Mr. Fowler stated, the industry's total purchases of services, supplies and labor totalled $425 millions. This included $85 millions for transportation, nearly $23 millions for fuel; over $23 millions for electricity; $42 millions for chemicals and supplies; about $14 millions for food and fodder. Money paid to workers totalled $195 millions, almost equally divided between mill-labor and workers in the woods. In all about a half a million workers depend directly on the Canadian pulp and paper industry for their livelihood.

Mr. Fowler also pointed out that indirectly also, the industry has made an outstanding contribution to Canadian economic growth. He said that in peacetime, pulp and paper mills use 50 per cent of all the power generated for industry and mining. Single newsprint mills use considerably more electrical energy than is required to light the cities of Montreal and Toronto combined. This has resulted, Mr. Fowler stated, in the pulp and paper industry heading the list of Canadian peacetime manufacturing industries since 1923. This year the gross value of the industry's production will be about $700 millions.

PRICES

With the elimination of price controls on paper, pulp, rags and other materials, the quotations given below once more become indicative of trends in an open market. At the moment they can be of little more, for, while some volume business still is being done under contract at the figures given below, fluctuations representing special conditions are too varied and too frequent to permit prices to be given as representing a wholly stabilized market.

Paper

(Delivered New York)

Standard News, per ton—

Roll, contract	$87.50	to	$90.00
Sheets	$109.00	"	—

Kraft—per cwt.—Carload Quantities

Zone A Deld. 40 lb. base wgt.

Superstandard Wrapping	$7.00	to	—
No. 1 Wrapping	6.50	"	6.75
Standard Wrapping	6.00	"	6.25
Standard Bag	5.75	"	6.25

Tissues—Per Ream 24x36 (480) 11 lb. Zone 1.

Wh. No. 1 Frd.	$1.75	to	$2.00
Wh. No. 1 M. G.	1.75	"	2.00
Wh. No. 1½	1.60	"	—
Wh. No. 2	1.55	"	—
Kraft Anti-Tar	1.38½	"	—
Kraft Unbl.	1.85	"	—
Manila No. 2	1.62	"	—

Toilet—Per Case of 100 rolls—1 M Sheets.

Unbleached	$5.50	to	$6.40
Bleached	6.50	"	7.60

Paper Towels—Per Case of 3750—

Zone 1.

Wh. Jr. M'tif'd 9¼x9½	$4.85
Br. Sr M'tif'd 10x12	3.45
Br. Jr. M'tif'd 9½x9¾	2.95
Br. Jr. Sgl. fold 10x10¾	3.10

Manila—per cwt.—C. l. f. a.

No. 1 Jute Tag	$14.50	to	—
Reg. Jute Manila	13.25	"	$15.50
No. 1 Manila	9.75	"	—

Boards, per ton—

News	$92.50	"	—
Chip	90.00	"	—
Sgl. Mla. L1 Chip*	102.50	"	—
White Pat. Coated*	120.00	"	—
Kraft Liners 42 lb.	100.00	"	—
Binders Boards	126.00	"	—

*** Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.**

The following prices are representative of distributors' resale prices, all deliveries in Zone 1: Rag Content Bonds and Ledgers—

White, Assorted Items Bonds, per cwt.

	Carton	4 C't'n	Ton
100% Rag Ext. No. 1	$55.00	$50.80	$48.70
100% Rag	48.25	44.55	42.70
75% Rag	38.00	34.55	33.10
50% Rag	31.50	28.75	27.50
25% Rag	28.00	25.50	24.50

Ledgers, per cwt.

100% Rag Ext. No. 1	$54.25	$50.00	$48.00
100% Rag	$47.50	$43.90	$42.10
75% Rag	37.50	34.55	33.10
50% Rag	32.25	29.40	28.25
25% Rag	28.75	26.15	25.10

Sulphite Bonds and Ledgers—White, Assorted Items Bonds, per cwt.

No. 1	$19.25	$17.50	$17.00
No. 2	18.25	16.50	16.00
No. 4	17.50	16.00	15.25

Ledgers, per cwt.

No. 1	$20.25	$18.35	$17.60
No. 2	19.25	17.50	16.80
No. 4	18.50	16.90	16.10

Free Sheet Book Papers—White, Cased Paper

(Per cwt.)	Case	Ton
No. 1 Glossy Coated	$20.40	$19.55
No. 2 Glossy Coated	19.15	18.30
No. 3 Glossy Coated	18.40	17.60
(Per cwt.)	Case	Ton
No. 1 Antique (Watermarked)	$15.90	$15.15
No. 2 Offset	14.15 to 17.90	13.65 to 17.10
A Grade E. F.	14.90	14.25
A Grade S. & S. C.	15.40	14.65
B Grade E. F.	Nominal	
B Grade S. C.	Nominal	

Wood Pulp

Domestic mill contract prices delivered with varying freight allowances.

	Per Short ADT
Groundwood	$75.00 to $81.00
Unbleached Sulphite	115.00 " 117.00
Bleached Sulphite	121.00 " 130.00
Bleached Soda	120.00 " —
Bleached Sulphite Unbleached Sulphate Northern	Nominal
Unbleached Sulphate Southern	Nominal

Canadian Quotations

Prices delivered with varying freight allowances unless otherwise specified:

	Per Short ADT	
Select Unbleached Kraft (no freight allowance)	125.00	" —
Reg. No. 1 Kraft	112.50	" 115.00
Unbleached Sulphite	115.00	" 117.00
Bleached Sulphite	125.00	" 155.00
Glassine Unbleached Sulphite (no freight allowance)	112.00	" —
Bleached Soda	120.00	" —
Groundwood	75.00	" 85.00
Sideruns Pulping News	75.00	" 80.00
Hardwood and Specialty Grades	Nominal	

Swedish Quotations

On dock, Atlantic Ports

	Per Short ADT
Bleached Kraft	170.00 to 195.00
Bleached Sulphite	175.00 " 185.00
Unbleached Sulphite	145.00 " 165.00
Unbleached Kraft	140.00 " 155.00

Finnish Quotations

On dock, Atlantic Ports

	Per Short ADT
Bleached Sulphite	$175.00 to —
Unbleached Sulphite	145.00 " 150.00
Unbleached Sulphate	140.00 " —

New Domestic Cotton Cuttings

(Prices delivered Mill Plus Dealer's Commission)

White Shirt	$11.50 to	$12.00
Light Silesias	7.50	
Unbleached Muslin	11.50 "	12.00
White Back Blue Overalls	8.50	
Blue Overalls	7.75	
Unbl. Fancy Shirt	5.00 "	5.50
Light Percales	6.00 "	6.50
Light Prints	5.25 "	5.95
Washables	4.00	
Bleachable Khaki	6.00 "	6.50
Unbleachable Khaki	5.50 "	6.00
Cottonades	5.00 "	5.50

Old Domestic Cotton Rags

(F.O.B. Shipping Point Plus Dealer's Commission)

	Per 100 lbs.
No. 1 Whites Repacked	$4.50
No. 1 Whites Miscellaneous	4.25
No. 2 Whites Repacked	4.00
No. 2 Whites Miscellaneous	3.50
Blue Overalls	3.75
Thirds and Blues Repacked	3.00
Thirds and Blues Miscellaneous	2.50
No. 1 Roofing Rags	2.00
No. 2 Roofing Rags	1.90
No. 3 Jute Bagging	1.80
No. 4 Brussels and hard back carpets	1.80
No. 5A Roofing Rags	1.80

New Foreign Cotton Cuttings

(Prices delivered Mill)

	Per 100 lbs.
New Dark Cuttings	$6.00 to —
New Mixed Cuttings	6.50 " —
Light Sielsias	nominal
Light Flannelettes	nominal
New White Cuttings	nominal
Fancy Shirt Cuttings	nominal
Light Prints	nominal
Bleachable Khaki, No. 1	7.00 " 7.50
Unbl. Khaki, No. 1	6.25 " 6.75

Old Foreign Rags

(Prices to Mill, f.o.b. dock, N.Y.)

	Per 100 lbs.
No. 1 White Linens	$14.00 to 16.00
No. 2 White Linens	12.00 " 13.00
No. 3 White Linens	8.00 " 9.00
No. 4 White Linens	8.00 " 9.00
No. 1 White Cottons	10.00 " 12.00
No. 2 White Cottons	8.00 " 9.00
No. 3 White Cottons	6.50 " 7.00
No. 4 White Cottons	5.00 " 5.50
Extra Light Prints	7.50 " 8.00
No. 1 New Light Prints	6.25 " 6.75
Med. Light Prints	5.25 " 5.75
Dutch Blue Cottons	5.25 " 5.50
Checks and Blues	4.00 " 4.25
Linsey Garments	3.00 " 3.75
Dark Cottons	2.20 " 2.60
Old Shopperies	2.50 " 3.00
New Shopperies	2.50 " 3.00

Bagging

(Prices to Mill, f.o.b. N. Y.)

	Per 100 lbs.		
Foreign Gunny, No. 1	$4.75 to		5.00
Domestic Gunny, No. 1	4.25 "		4.50
Light Wool Tares	4.50 "		4.75
Heavy Wool Tares	4.75 "		5.00
No. 1 Scrap Bagging	4.75 "		5.00
Foreign Manila Rope	6.00 "		6.75
Domestic Manila Rope	5.75 "		6.50
Jute Strings	4.50 "		5.00
No. 1 Sisal Strings	5.50 "		6.00
Mixed Strings	1.75 "		2.50
Mixed Strings, Outthrows	.90 "		1.10

Waste Paper

Base Prices to Mills

(Dollars Per Ton)

F.o.b. New York, Baled

No. 1 Hard White Envelope Cuts, one cut	155.00 to 165.00
No. 1 Hard White Envelope Cuts	145.00 " 155.00
No. 1 Hard White Shavings, unruled	145.00 " 155.00
No. 1 Hard White Shavings, ruled	110.00 " 130.00
Soft White Shavings, one cut	145.00 " 155.00
No. 1 Soft White Shavings	135.00 " 145.00
Soft White Shavings, Misc.	125.00 " 135.00
No. 1 Fly Leaf Shavings	45.00 " —
No. 1 Groundwood Fly Leaf Shavings	30.00 " —
No. 1 Heavy Books & Magazines	30.00 " —
Mixed Books	15.00 " 20.00
No. 1 White Ledger	85.00 " 90.00
New Manila Envelope Cuttings, one cut	100.00 " 110.00
New Manila Envelope Cuttings	65.00 " 75.00
Extra Manilas	25.00 " 30.00
Mixed Kraft, Env. & Bag Cuttings	75.00 " 85.00
Kraft Envelope Cuttings	110.00 " —
Triple Sorted, No. 1 Brown Soft Kraft.	65.00 " 75.00
No. 1 Assorted Old Kraft	55.00 " 60.00
New Jute Corrugated Cuttings	27.00 " —
Old 100% Kraft Corrugated Containers	45.00 " 50.00
No. 1 News	15.00 " —
No. 1 Mixed Paper	13.00 " —
Box Board Cuttings	16.00 " —
White Blank News	75.00 " 80.00
Overissue News	20.00 " —
Old Corrugated	30.00 " —
Mill Wrappers	22.00 " 25.00

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)

Coarse Polished—India	.28¼	to	.29¼
Fine Polished—Fine India	.31¾	"	.36¼
Unpolished—Paper Makers	.24	"	.25½
Tube Rope	.24¾	"	.26¼
Wrapping	.30	"	.32
Cotton	.55	"	.70

(Hard Fiber)

Mex. Sisal	.21	"	.31
Manila (Reprocessed)	.28	"	.30

(American Hemp)

Polished Hemp	.36¾	"	.42
Unpolished	.29¾	"	.34

PHILADELPHIA

Domestic Rags (New)

(F.O.B. Eastern Shipping Point)

Shirt Cuttings—			
New White No. 1	.11	to	.12
New White No. 2	nominal		
Light Silesias	.07¼	"	.08
Black Silesias, soft	.06½	"	.07
New Unbleached	.10½	"	.11¼
Washable Prints	.06½	"	.07
Washable No. 1	.05	"	.05½
Blue Overall	.07½	"	.08
Cottons—According to grades—			
Washable Shredding	.03½	"	.04
Fancy Percales	.06¾	"	.07¼
New Black Soft	nominal		
Khaki Cuttings—			
Unbleachable Cotton Cuttings	.06	"	.06½
Bleachable Cotton Cuttings	.07	"	.07½
Men's Corduroy	.05¾	"	.06
Ladies' Corduroy	.05	"	.05¾
Cottonades	.05½	"	.06

Domestic Rags (Old)

(F.O.B. Eastern Shipping Point)

White No. 1—Repacked	4.50	to	5.00
Mixed White	4.00	"	4.25
White No. 2—Repacked	3.50	"	3.75
Thirds and Blues—Miscellaneous	2.25	"	2.50
Repacked	2.75	"	3.00
Roofing Stock—			
Foreign No. 1	nominal		
Domestic No. 1	1.85	"	1.90
Domestic No. 2	1.75	"	1.80
Roofing Bagging	1.65	"	1.70
Old Manila Rope	6.50	"	6.50

Bagging

(F.O.B. Eastern Shipping Point)

Gunny No. 1—			
Foreign	nominal		
Domestic	4.50	to	5.00
No. 1 Clean Bright—			
Sisal Strings	.04	"	.04½
No. 2 Clean Bright—			
Sisal Strings	.03	"	.03½
Sisal Jute	.02¾	"	.03
Scrap—			
No. 1	4.25	"	4.75
No. 2	1.75	"	2.00

Wool Tares, heavy	4.75	"	5.00
New Burlap Cuttings	6.00	"	6.50

Old Papers

(F. o. b. Phila.)
Mill Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	$100.00	to	$115.00
No. 1 Hard White Shavings, unruled	100.00	"	—
Soft White Shavings, one cut	90.00	"	95.00
White Blank News	70.00	"	75.00
Soft White Shavings	80.00	"	—
No. 1 White Ledger	80.00	"	85.00
Ledger, Colored	67.00	"	70.00
No. 1 Heavy Books & Magazines	30.00	"	32.00
Overissue Magazines	nominal		
New Manila Envelope Cuttings	80.00	"	—
No. 1 Assorted Old Kraft	60.00	"	65.00
No. 1 Mixed Paper	15.50	"	—
Box Board Cuttings	15.00	"	—
Kraft Corrugated Cuttings	90.00	"	100.00
Old Corrugated	30.00	"	35.00
Overissue News	30.00	"	—
No. 1 News	18.00	"	20.00

BOSTON

Old Papers

(F. o. b. Boston)
Mill Prices, Baled

No. 1 Hard White Shavings, unruled	7.00	to	8.00
No. 1 Hard White Shavings, ruled	7.00	"	8.00
Soft White Shavings, Misc.	6.25	"	6.50
No. 1 Fly Leaf Shavings	1.65	"	1.80
No. 2 Fly Leaf Shavings	2.00	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	1.25	"	1.50
Mixed Colored Shavings	2.50	"	2.75
New Manila Envelope Cuts, one cut	5.00	"	5.50
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	3.50	"	3.75
Mixed Kraft Env. & Bag Cuttings	3.75	"	4.00
Kraft Envelope Cuttings	3.75	"	4.00
No. 1 Heavy Books & Magazines	2.50	"	2.60
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	4.25	"	4.50
Groundwood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	3.50	"	—
No. 1 Mixed Paper	—	"	.95
Overissue News	1.50	"	1.75
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.50	"	—
Jute Corrugated Cuttings	1.07½	"	—
Paper Strings	2.25	"	2.50

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	—	to	4.75
Domestic	—	"	4.75
Sisal Rope No. 1	6.00	"	—
Sisal Rope No. 2	5.50	"	—
Mixed Rope	5.25	"	—
Mixed Strings	2.00	"	2.50
Transmission Rope—			
Foreign	(nominal)		
Domestic	3.00	"	3.50
Manila Rope—			
Foreign	(nominal)		
Domestic	6.25	"	—
Soft Jute Rope	5.00	"	5.25
Jute Carpet Threads	6.00	"	—
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	—	"	4.75
Domestic	—	"	4.87½
South America	5.25	"	—
Wool Tares—			
Foreign	4.75	"	—
Domestic	4.75	"	—
Aust. Wool Pouches	5.00	"	5.25
New Zealand Wool Pouches	5.25	"	5.50
New Burlap Cuttings	6.00	"	6.50
Heavy Baling Bagging	5.25	"	5.75
Paper Mill Bagging	3.50	"	3.75
No. 1 Roofing Bagging	1.75	"	—

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.08	to	—
Fancy Percales	.07½	"	.08
New White No. 1	.11	"	.11½
New Light Flannelettes	.08	"	.08½
Canton Flannels, Bleached	.10	"	.11
Underwear Cutters, Bleached	.10	"	.11
Underwear Cutters, Unbleached	.11	"	.12
Silesias No. 1	.08	"	.08½
New Black Silesias	.05	"	—
Red Cotton Cuttings	.05	"	—
Blue Overalls	.08½	"	.09
Soft Unbleached	.11	"	.12
Blue Cheviots	.08½	"	.09
Fancy	.06	"	—
Washable	.06	"	—
Khaki Cuttings	.06½	"	.07½
Corduroy	.03½	"	—
Khaki Canvas	.06¼	"	.06½
B. V. D. Cuttings	.10½	"	.11¼

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	to	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	2.00	"	—
No. 2	1.75	"	2.00
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.20	"	—
Quality C	.95	"	—
Old Manila Rope	6.00	"	—

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)
Mill Prices, Baled

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	$110.00	to	$120.00
No. 1 Hard White Shavings, unruled	105.00	"	115.00
No. 1 Soft White Shavings	80.00	"	95.00
No. 1 White Ledger	55.00	"	65.00
No. 1 Heavy Books & Magazines	40.00	"	43.00
White Blank News	65.00	"	—
Mixed Kraft Env. & Bag Cuttings	75.00	"	85.00
No. 1 Assorted Old Kraft	45.00	"	55.00
Overissue News	28.00	"	—
No. 1 News	18.00	"	20.00
No. 1 Mixed Paper	12.00	"	15.00
Old Corrugated	30.00	"	40.00
Mill Wrappers	22.00	"	—

MARKETS

BLANC FIXE—Market steady, deliveries fair and supplies adequate. Pulp is currently quoted at $77.50 per ton in barrels, car lots at works, and $82.50 l.c.l., f.o.b. works.

BLEACHING POWDER—Market tightened. Demand firm. Shipments improved. Quotations are unchanged. Prices range from $3.50 to $4.00 per 100 pound drums l.c.l., works.

CASEIN—Market temporarily unsettled due to speculations in Argentine product. Current prices on processed acid precipitated casein remain at previous levels and are quoted around 31½ to 33 cents per pound for domestic grades and 30 to 31½ cents for imported grades f.o.b. shipping point.

CAUSTIC SODA—Market extremely tight. Production unequal to expanding demand. Solid caustic is reported at $2.85 per cwt.; flaked and ground is quoted at $3.25 per cwt. in 400 lb. drums, $3.75 per cwt. in 100 lb. drums—car lots at works; liquid 50% in tank cars at $2.25 per cwt.; liquid 73% in tank cars $2.35 per cwt. at works.

CHINA CLAY—Market steady, domestic grades in good supply. Domestic filled clay is currently $10 to $13 per ton, car lots, coating clay $15 to $30, imported clay from $18 to $35 export warehouse.

CHLORINE—Heavy demand exceeds available supply. Market definitely tight. Quantities unchanged. Currently quoted $2.25 per cwt. in single unit tank cars, and $3.75 per cwt. in multi-unit tank cars, f.o.b. works.

ROSIN—Strong resistance to present prices. Buying slower. Prices firm. Gum rosin in drums per 100 pounds net, in yard, New York, car lots, B, D, $8.25; E, F, $8.50; G, H, I, K, M, N, $9.80; WG, $10.27; WW, $10.48. Wood rosin, per 100 pounds net, f.o.b., l.c.l., N. Y., $6.45; FF, $7.95; G, H, I, K, M, $9.55; N, $9.60; WG, $10.12; WW, $10.33; X, $10.43.

SALT CAKE—Demand continues strong with slight improvement in shipments. Prices remain unchanged. Domestic salt cake is quoted at $20 to $26.

SODA ASH—Pressing demand with no improvement in supply situation. Contract prices adjusted to higher levels. Current prices, car lots, per 100 pounds, are as follows: in bulk, $1.10; in paper bags, $1.30; and in barrels, $1.80.

SODIUM BICARBONATE—Supply good. Reported at $1.85 per cwt. paper bags, carload lots.

STARCH—Market steady. Active demand, export demand light. Pearl grade quoted at $6.52 per 100 pounds, powdered starch at $6.63 per 100 pounds, car lots, Chicago.

SULPHATE OF ALUMINA—Production insufficient. Buying tight. Prices firm. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.30 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is quoted at $1.95 to $2.25 per 100 pounds in bags at works.

SULPHUR—Supplies ample to meet increasing demand. Annual contracts are quoted at $18 per long ton, f.o.b. mines; the price f.o.b. at Gulf ports is $19.50 per long ton.

TALC—No improvement seen in domestic market. Demand far in excess of supply. Domestic grades are currently quoted at from $16 to $30 per ton in mines; Canadian at $35 to $45 per ton. All prices in car lots.

DIGESTED

Among Canada's peacetime industries, pulp and paper stands first in employment, first in total wages paid, first in export values, first in net value of production; and, by a large margin, first in capital invested. The pulp and paper companies buy more goods and services than any other industrial group in Canada.

Last year, for example, the industry's total purchases of services, supplies and labour totalled $425 millions. This figure included $85 millions for transportation, nearly $23 millions for fuel, over $23 millions for electricity, $42 millions for chemicals and supplies, about $14 millions for food and fodder. The sums paid to workers totalled about $195 millions, which were almost equally divided between mill-labour and workers in the woods. No manufacturing industry pays its labour better; none has been freer of strikes or with a better history of relations between management and labour.—R. M. Fowler, from an address before the Canadian Club of Montreal.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1947		Corresponding Weeks—1946	
September 13	106.9	September 14	105.1
September 20	108.6	September 21	105.8
September 27	107.0	September 28	106.6
October 4	109.5	October 5	107.2
October 11	108.4	October 12	105.9
October 18	*108.3*	October 19	105.1

COMPARATIVE MONTHLY SUMMARIES

1946							
Jan.	94.7	June	104.6	Dec.	97.0	Apr.	105.1
Feb.	98.4	July	94.0	Year Avg.	101.1	May	106.2
Mar.	104.4	Aug.	104.7	1947		June	106.0
Apr.	102.7	Sep.	101.3	Jan.	102.1	July	93.5
May	100.7	Oct.	106.4	Feb.	105.9	Aug.	104.2
		Nov.	105.5	Mer.	106.1	Sep.	*102.0*

COMPARATIVE YEARLY SUMMARIES

	1940	1941	1942	1943	1944	1945	1946	1947
Year to Date	86.1	95.9	92.0	88.3	88.2	88.8	100.8	*103.8*
Year Average	85.6	97.4	90.4	87.8	88.1	89.4	101.1	

PAPERBOARD OPERATING RATIOS†

Current Weeks—1947		Corresponding Weeks—1946	
September 13	103	September 14	101
September 20	101	September 21	100
September 27	102	September 28	101
October 4	100	October 5	100
October 11	102	October 12	99
October 18	*101*	October 19	98

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1946	90	91	100	99	94	97	89	99	96	100	99	92	96
1947	99	103	101	100	101	101	90	99	*96*				

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

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EDITORIAL

Industry Looks at Exports

In a period of sometimes acute shortage where every shipment to some one other than the victims of the shortage those who have made exports their specialized field of interest have labored under handicaps. Not only have they suffered the same difficulties in getting deliveries on paper as everyone else has been afflicted with; they have been put to a position where, at times, they have had to make more plain the value of their activity, and the small amount of mill capacity that it represents.

It was helpful therefore, to all concerned, that in his address this week before the National Paper Trade Association E. W. Tinker should view the United States paper industry as a part of a vast world picture, and in the course of his remarks should touch on the modest efforts of the exporters. Referring to expansions of productive capacity the American Paper and Pulp Association secretary recited that since 1939 the population of the United States has grown by some ten per cent or more. Per capita consumption of paper in this country, moreover, has increased in the same interval from 244 to 350 pounds. This increase naturally is coupled with a high standard of living, and reflects extended use of paper in text books, newspapers, wrapping and industrial uses.

Then he turned to foreign trade and showed how pulp and paper in fact may become an active instrument of foreign exchange. There are possibilities, he declared, for multilateral trade based on production from American pulp and paper mills. A domestic firm might, for instance, ship a cargo to Brazil, accepting payment in Brazilian money exchange. With this exchange coffee might be bought at Sao Paulo for shipment to Sweden, where it would be sold for Swedish exchange. This exchange in turn, could be used, to buy Swedish pulp for shipment to paper mills in this country, where it would be processed again into paper either for domestic use or for further service in international markets.

The extent to which this process might be carried, of course, is limited by competitive demands from other industries and from other nations. But in the over-all picture it is speculatively impressive. Over the past years, Mr. Tinker showed, the amount of domestic production set aside for foreign trade has been relatively small, amounting to some 1.5 or 2 per cent of total production. And yet social and industrial movements all over the world are such as to indicate that a considerable jump in this percentage might well develop at any moment. The per capita consumption of paper and paperboard for the whole world is only about ten pounds. An increase of only five pounds per year per person in China and India would add 2,500,000 tons to the world's need of paper. This against the 200,000 to 465,000 tons yearly that the export branch of the industry has been accustomed to handle.

Clinching testimony as to the importance of exports to all paper men is to be found in Mr. Tinker's introduction to his subject. The general public, he says, and in this he logically includes those in the paper trade, does not understand what an important part this industry plays in international trade. Most people can think readily enough of coffee, tin, rubber, silk as items that are imported in substantial volume. But, according to Mr. Tinker's figures, the pulp and paper industry accounts in its own requirements, for approximately ten per cent of the total imports of this country.

Forecast in Conventions

A man who gets around a good deal in and out of the paper business commented the other day on the heavy attendance at conventions which he had observed. Those who have attended recent gatherings of paper men will know what he meant; recent regional meetings of the Superintendents, specialized meetings of TAPPI, the currently overflowing meeting at Chicago of the National Paper Trade Association all have been distinguished for the heavy crowds that they have drawn. Some large professional associations have found their meetings so well attended that their choice of locations is becoming more and more limited. It augurs well, this observer believes, for industrial and professional progress of the next few years to discover that the heavy attendance, in addition to usual convention amenities, is responsive to the care of the program builder, as reflected by attendance at meetings.

Retirement

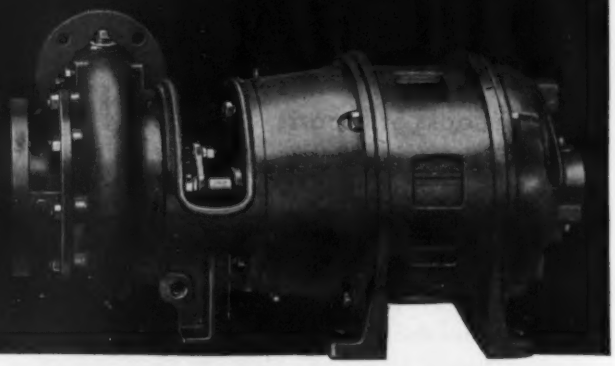
A testimonial, if any were needed, as to the practical indestructibility of paper mill equipment was brought to light this week by a former paper mill superintendent. The mill itself has passed to other hands, most of its machinery now is in active service again in South America, and its former superintendent returned from his installation duties there, now is in the business of public hospitality along a main highway that runs northward through Connecticut and Massachusetts. The old beater tank from the mill, its cyprus boards now polished to a velvety smoothness has gone along with him, and proudly serves as the bar of George Forman's Silo restaurant on the outer edge of Farmington, Conn.

W. L. Cook

Editor

Goulds announces..

NEW "CLOSE-CUPLD" CENTRIFUGAL PUMPS



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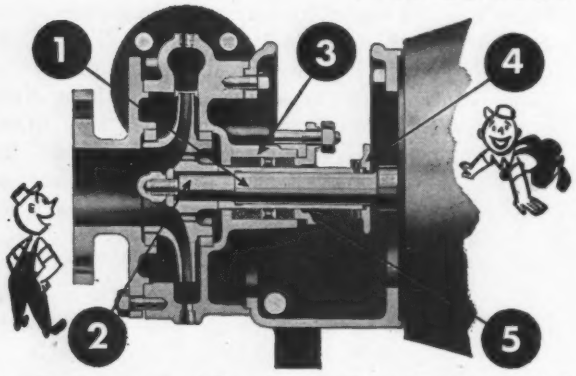
Drawing upon 100 years of pump design and manufacture, Goulds presents a new line of "Close-Cupld" Centrifugals which give you improved pumping efficiency, simpler maintenance and longer life. Through standardization, wearing parts are interchangeable for pumps of varying sizes. This minimizes spare parts, an important advantage where various size pumps are operating.

Designed for a broad range of service, the field for these new Goulds "Close-Cupld" Pumps is almost unlimited. With heads up to 400 feet, depending on capacities, there is a "Close-Cupld", Pump for almost every condition. Pump and motor are combined in a single, compact assembly, ready to install and operate in any position except vertically with motor below pump.

WHY NEW GOULDS "CLOSE-CUPLD" LAST LONGER



1. Shaft sleeve covers full length of shaft . . . compression seals between shaft sleeve and impeller hub and sleeve and shoulder on shaft completely protects shaft from liquid damage—prolongs life of pump and motor.

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3. Machined stuffing box designed for *die-formed*, semi-metallic packing or mechanical seal without necessity of making changes . . . gives you operating flexibility.

4. Liquid deflector, mounted on end of shaft sleeve, is drilled and tapped so that in servicing pump it can be used to prevent shaft rotation while removing or tightening impeller nut; also, to remove sleeve . . . a time saver.

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122 E. 42nd ST., NEW YORK 17, N. Y. Edited By R. G. MACDONALD, Secretary

Diatomaceous Filter Aids for Paper Mill Waters and Effluents*

By Gordon G. Halvorsen[1]

Abstract

Filtration of paper mill process and effluent waters using diatomaceous silica filter aids shows a satisfactory solution for total recovery of white water suspended solids and reuse of clarified water. Laboratory and pilot plant filtration data are given on various mill white waters and effluents. Filtration using filter aids offer immediate opportunities for closing up the mill system. The waters clarified are acceptable for use in low volume showers. Estimates show that the savings effected will be substantially greater than the cost of operation.

The use of diatomaceous silica paper aids in paper mills has developed into broad usage during the past five years. Their use in controlling slime and pitch, increasing brightness, as well as saving fiber, increasing output and reducing cost, has been a helpful benefit to many paper mills. Diatoms, (see Fig. 1) now promise to offer an additional contribution to the paper industry in effecting an answer to the ever present problem of fiber loss, water conservation, and stream pollution. The recovery of effluent solids has been an outstanding problem for many mills, both from stream pollution and fiber waste. Equipment of various designs are being used having mediocre to good solids recovery. However, present day solids recovery systems do not offer a 100% solution to either solids recovery or water clarification. Laboratory and pilot plant tests have shown that filtration of white water effluents with diatomaceous filter aids are economically feasible.

Diatomaceous Filter Aids

Diatomaceous filter aids are very similar to diatomaceous paper aids as both are soft, friable, amorphous silica, the greatest difference being in the particle sizes, shapes, and distribution. These filter aids are produced in several grades offering a wide range of filtration rate and degree of clarification.

The function of a diatomaceous silica filter aid is to form a rigid incompressible filter cake. Filtration removes both the filter aid and suspended solids together forming a porous cake which allows the filtration to continue at a much higher rate than would be obtained without the addition.

Filtration Equipment

Most paper mills are familiar with sand type filters, however, filters which employ diatomaceous filter aids are of different design. Many types of filters are available which operate either under pressure or vacuum. In general, there are two types of pressure filters, plate and frame presses and enclosed pressure filters but the principle of operation is the same. A filter medium of cloth, screen, or special fabrication is supported by a frame provided with channels for drainage of the filtrate. The solids in the material being filtered are retained on the filter media in the form of a cake which may be discharged by scraping down manually or mechanically, or back washing according to the design. The capacity of a filter, or the through-put in gallons per square foot of filtering area, is determined by the volume delivered up to the maximum pump pressure or until the filter cake space is full. Best filtration cycles are obtained when it is possible to balance the amount of filter aid used to the point where maximum pressure is reached at full cake space.

Vacuum type filters usually employ a rotating drum maintaining a vacuum in inner sections of the drum. The drum may be covered with cloth, screen, or string which are supported by a drainage grid. The collected solids may be discharged by means of a scraper blade, water shower, or by a system of endless strings passing around the drum and over a mechanism for discharging the cake.

Filter System

To provide the most economical arrangement for diatomaceous filtration of white waters it is desirable to first reduce the volume of waters to be handled to the minimum point possible, and, this can be accomplished, to a large extent, by a thorough study and measurement of volumes of fresh, recirculated, and effluent waters being handled throughout the mill. Reduction in volumes at felt, screen, cylinder, and extractor showers can be obtained by the use of low volume showers. Deckle showers which will require considerably less water may be redesigned or purchased. Many mills have had previous experience

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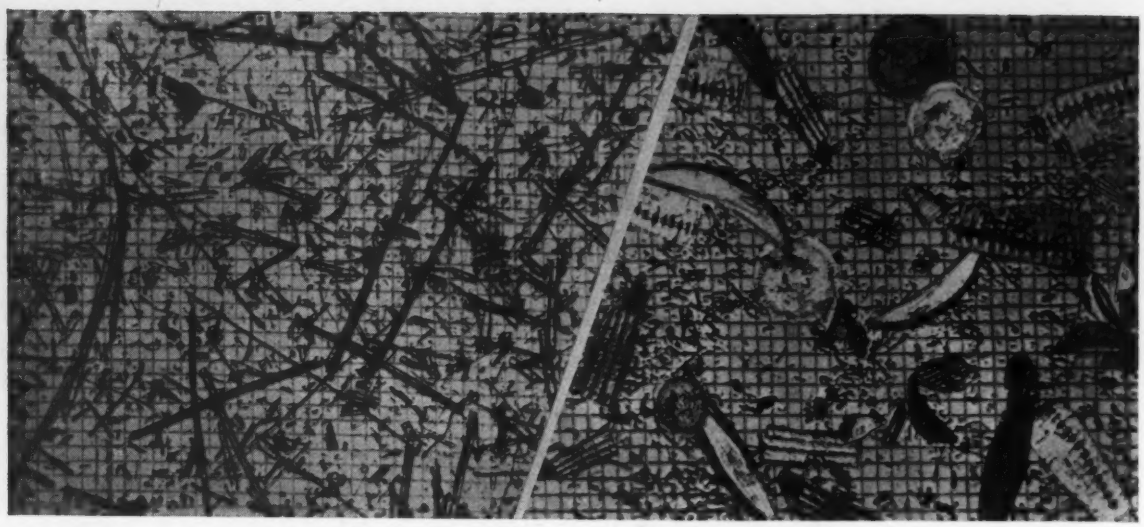

by Merriam Photo Art

FIG. 1
Left Section of Photomicrograph Pictures Acicular Diatoms.
Elongated Diatoms Are on the Right Section.

with low volume showers which have been unsatisfactory because of plugging of the orifice nozzles. The solution to this problem has been satisfactorily demonstrated by first filtering the well, or river water through a filter aid precoat, with or without the addition of small amounts of filter aid in the water.

With the volumes of fresh water thus reduced to a minimum, filtration of the effluent can be undertaken which will result in further reduction of fresh water by using the filtered clean water in the shower system. The filter cake consisting of the white water suspended solids and filter aid will be returned to the beaters. At a later date it is planned to present data now being collected on a complete filtration installation at which time water balances and operational data will be given in full detail.

Laboratory and Plant Filtration Studies on Process Water

Many mills have encountered difficulty operating low volume showers on their fresh water supply. Exceedingly small amounts of iron, sand, clay, or algae in the water tend to plug the shower nozzles in a short period of time. Plant filtration tests on well waters, which have previously been unsatisfactory for low volume showers, have shown completely satisfactory results. Volumes of 15,000 to 25,000 gallons per square foot per cycle have been handled at a rate of 120 to 180 gallons per square foot per hour using only a 0.1 to 0.15 pound per square foot precoat of diatomaceous earth. No additional filter aid was added to the water.

Laboratory filtration tests on river waters containing small amounts of sand and clay have shown volumes of 5,000 to 20,000 gallons per square foot per cycle at rates of 90 to 120 gallons per square foot per hour, using a precoat only, or with additional filter aid up to 2 pounds per thousand gallons under extreme conditions.

Laboratory Pressure Filtration White Water Studies

For the pressure filtration studies, a laboratory filter was used which has interchangeable filter areas and uses air pressure as a driving force. (See Fig. 2). Flows are measured at 3-minute time intervals for 21 minutes. The data are plotted and extrapolated to the desired cycle length.

In Table I is shown filtration rates using various amounts of a diatomaceous filter aid on mill A total mill effluent before and after saveall. The results of these tests are interesting as they show that the use of the saveall does not appreciably improve the filterability of the effluent. The data in Table I are shown in Fig. 3. Referring to Fig. 3, curves 1 and 3 demonstrate the differences in filterability between two types of diatomaceous filter aids. It is advisible to use the fastest filter aid conducive with producing a clear filtrate. In these tests both types of filter and showed brilliant clarity. Curves 1 and 2 show filtration rates on the white water before and after the saveall. This shows no appreciable difference in filterability of the white water at this mill by reducing the solids at the saveall.

These data also show how filtration rates can be controlled by increasing or decreasing the percentage of filteraid. While these tests were run at 10 p.s.i., flows of about twice the amounts shown are obtained at pressures of 40 p.s.i. and 2½ times at 60 p.s.i.

Variations in filterability of white waters in mill B are shown in Table II.

The small differences in quantity of suspended solids in these white waters do not justify the greater variations in filterability. The character of the suspended solids has more effect upon filtration rate than the quantity. Size, distribution, and rigidity of solids have more effect upon filtration than the amount of suspended solids within the limits in which these waters vary.

Filter tests on the effluents at various points were made in mill C. The data on these tests are shown in Table III. This mill operates a saveall on No. 1 machine and a clarifier on No. 2 machine. There is an appreciable difference shown in the rates of flow of the white water before and after the saveall or clarifier. As is shown, using 8.3 pounds type A filter aid per 1000 gallons on white water from No. 1 machine containing 6.0 pounds per 1000 gallons suspended solids, the average rate on a 4 hour cycle is 10.7 gallons per square foot per hour. After this effluent

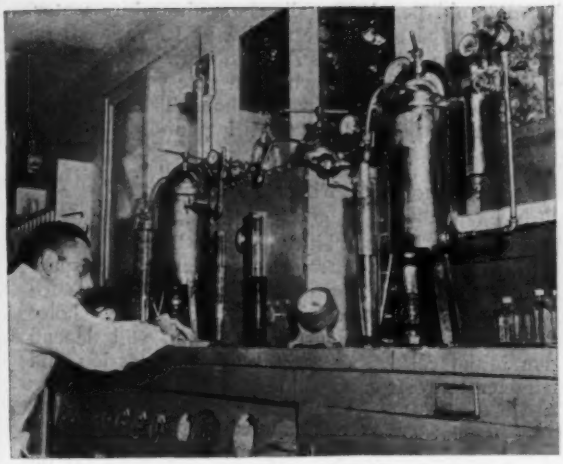

FIG. 2
Series of Test Filters for Determining Flow Rates and Clarification.

has been passed over the saveall it contained 0.5 pounds per 1000 gallons and showed a rate of 70.0 gallons per square foot per hour using 8.3 pounds of the filter aid per 1000 gallons. Greater differences are shown on No. 2 machine where the suspended solids were reduced to 0.2 pounds per 1000 gallons after the clarifier. The average rate of flow on the sewer effluent containing 1.1 pounds solids per 100 gallons and using 8.3 pounds filteraid per 1000 gallons showed 43.6 gallons per square foot pe rhour at 10 p.s.i.

Laboratory Vacuum Filtration White Water Studies

Test runs on vacuum filtration were made using a laboratory size Oliver United precoat filter, having a 12-inch drum diameter. Using a water slurry of filter aid a precoat was built up to about 2 inches thick. The exposed sides were trimmed so as to make the cake 2⅞ inches wide. The precoat is held to the face of the drum by vacuum and a doctor blade continuously cuts off a portion of the filteraid precoat together with the solids collected. The depth of cut and speed of rotation determines the cycle length of the filter before a new precoat must be applied. All tests were run at 20 inches vacuum. Tests were run 45 minutes to determine average rate of flow at various speeds, thickness of cut, and percentage filter aid.

Tests 1 and 2 are the results of several trial runs using lesser cuts to determine the minimum cut that would maintain a constant rate of filtration. It was found that a cut of 0.006 inches per revolution was necessary. Tests 3, 4 and 5 were made using a small cut of 0.001 inch per revolution on the precoat with addition of 8.3 pounds filter aid per 1000 gallons white water. These tests show promise of having a good rate of flow for a long cycle. Test 4 shows the longest cycle of the test runs made; however, the flow dropped considerably as the run progressed indicating that the estimated cycle, on the basis of the data, is in excess of that which would be obtained on large scale operation. Test 5 gives data which indicate the most promising results,—no drop in flow was observed over the period of test. Tests 6, 7, and 8 are similar to 3, 4, and 5 with less of the filter aid being used in the white water. The rates and cycle lengths obtained are lower, the trend showing degradation of rates because of insufficient filter aid. Test 9 using an extremely small cut of 0.0005 inches per revolution and 8.3 pounds filter aid per 1000 gallons white water showed a fairly uniform rate, however, the estimated cycle would be somewhat high. Test 10 was made without any precoat cut using 12.5 pounds of the filter aid per 1000 gallons white water. The rates show a degradation and it is presumed that the cycle length would be short.

TABLE I.—LABORATORY FILTRATION TESTS ON MILL A WHITE WATER BEFORE AND AFTER SAVEALL USING DIATOMACEOUS FILTER AIDS

Tests at 10 p.s.i. constant pressure and 68° F.

Filter Aid, lb./1000 gal effluent	Type of Filter Aid	Rate— 4 Hr. Cycle, gal./sq. ft./hr.	Solids in Effluent, lb./1000 gal.
	Before Saveall		
None	Type A	2.25	3.5
0.83	Type A	3.0	..
1.67	Type A	4.0	..
3.34	Type A	6.6	..
6.67	Type A	14.2	..
13.34	Type A	27.1	..
26.65	Type A	38.3	..
53.30	Type A	49.3	..
4.17	Type B	4.3	3.5
12.50	Type B	11.5	..
25.00	Type B	17.9	..
	After Saveall		
4.17	Type A	12.0	1.6
12.50	Type A	27.9	..
25.00	Type A	32.6	..

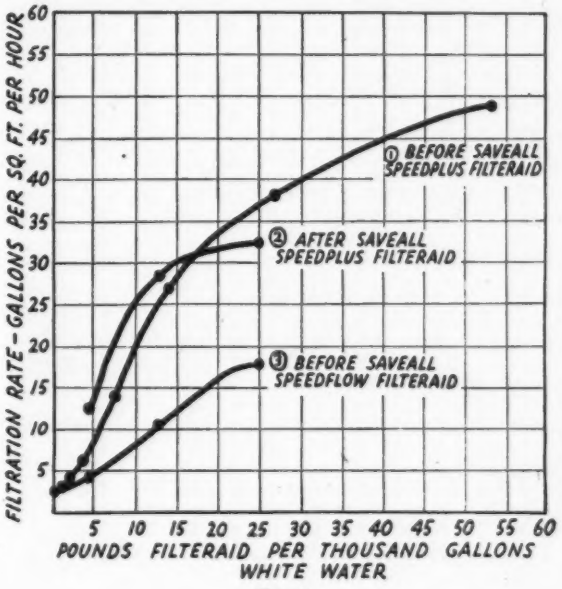

FIG. 3
Filtration Tests at 10 p.s.i. Mill A White Waters Using Diatomaceous Filter Aids.

In all the vacuum precoat tests the clarity of the water was poorer than those obtained by pressure filtration. It is felt that this water may require additional polish filtration before using in low volume showers.

Pilot Plant Filtration Tests

Further testing on this investigation was made using a small commercial pressure type filter having 50 square feet of filtering area. This filter was connected to a centrifugal pump which was supplied by a white water chest. The flow from the filter was calibrated for maintaining the rate at a predetermined quantity.

Table V shows data obtained on filtration of white water from a machine producing board made from sulphite and graded waste paper. This stock is clean

TABLE II.—LABORATORY FILTRATION TESTS ON MILL B WHITE WATERS

Tests at 10 p.s.i. constant pressure using Type A diatomaceous filter aid

Water	Filter Aid, lb./1000 gal.	Av. Rate— 4 Hr. Cycle, gal./sq. ft./hr.	Suspended Solids, lb./1000 gal.
White water No. 1 machine	12.5	37.0	2.79
White water No. 2 machine	12.5	21.3	3.16
Total mill effluent.....	12.5	36.3	3.3

TABLE III.—LABORATORY FILTRATION TESTS ON MILL C WHITE WATERS

Tests at 10 p.s.i. constant pressure using Type A diatomaceous filter aid

Water	Filter Aid, lb./1000 gal.	Av. Rate— 4 Hr. Cycle, gal./sq. ft./hr.	Suspended Solids, lb./1000 gal.	Cake Thickness at 4 Hr., in.
No. 1 machine	4.17	9.4	6.0	0.73
white water	8.3	10.7	6.0	0.74
	16.7	18.4	6.0	1.67
No. 1 machine	None	4.9	0.5	...
white water	2.08	24.7	0.5	0.31
after saveall	4.17	54.1	0.5	0.51
	8.3	70.0	0.5	1.35
No. 2 machine	8.3	10.0	7.0	1.11
white water	16.7	14.5	7.0	1.71
	33.5	21.1	7.0	2.87
No. 2 machine	None	34.3	0.2	...
white water, after clarifier	2.08	217.0	0.2	0.81
Sewer effluent	8.3	43.6	1.1	0.66

TABLE IV.—VACUUM PRECOAT TESTS ON MILL B WHITE WATER

Type A diatomaceous filter aid—suspended solids 3.3 lb./1000 gal.

Test No.	Filter Aid Added to White Water, lb./1000 gal.	Total Filter Aid, lb./1000 gal.	Drum Speed, r.p.m.	Cut, in./rev.	Av. Rate, gal./ sq. ft./hr.	Estimated Cycle Length 2 in. Precoat, hr.
1	None	13.3	1.000	0.006	40.4	5.6
2	None	6.7	0.715	0.006	43.4	7.8
3	8.3	10.0	0.715	0.001	39.5	46.0
4	8.3	9.2	0.715	0.0005	35.0	93.0
5	8.3	10.0	0.536	0.001	28.6	62.0
6	4.16	7.5	0.715	0.001	20.3	46.0
7	4.16	8.3	1.000	0.001	24.4	33.0
8	1.67	5.84	1.000	0.001	25.4	33.0
9	8.3	10.0	1.000	0.0005	37.3	66.0
10	12.5	12.5	1.000	None	27.9	...

TABLE V.—PILOT PLANT FILTRATION TESTS ON WHITE WATERS IN MILL B

Constant flowrate at 30 gal./sq. ft./hr. using Type A diatomaceous filter aid

	TEST RUN						
Water	Filter Aid, lb./ 1000 gal.	Suspended Solids, lb./ 1000 gal.	Time, min.	Pressure, p.s.i.	* Cycle Length, min.	Gal./ Sq.ft./ 1 in. Cake Thickness	Gal. Sq. ft./ Cycle 68 p.s.i. Pressure
White water butter box and milk cap furnish	16.7	6.6	150	12.0	200	103	...
Water during wash-up from plain chip furnish	8.3	6.7	163	43.0	210	...	108
White patent coated news furnish	16.7	3.05	260	62.5	270	...	139

* Determined by maximum pressure of 68 p.s.i. or 1-inch cake thickness whichever is reached first.

and the white water was filtered quite easily. A lesser amount of filter aid could have been used which would have increased the through-put before reaching a 1-inch cake thickness. A test was run during the wash up from plain chip production. With the amount of filter aid used the maximum pump pressure would be reached before a cake space of 1 inch would be filled. This was also shown on the test on white water from a white patent coated news furnish.

The data given in Table VI show the cycle lengths obtained on white water from Mill D. Test 1 shows a cycle of 25 minutes at a constant rate of 30 gallons per square foot per hour to a pressure of 50 p.s.i. This is on a white water without addition of filter aid. Tests 2 and 3 show cycles of 65 and 80 minutes using 4.16 pounds of diatomaceous earth per 1000 gallons on white water having 3.3 and 2.6 pounds suspended solids per 1000 gallons.

Tests 4, 5, and 6 show differences in cycle lengths of 149, 184, and 190 minutes using 8.3 pounds of the filter aid per 1000 gallons on the white water The suspended solids averaged 2.3; 1.7 and 3.0 on the respective tests. Tests 7 and 8 show cycle lengths of 100 and 140 minutes when the rate was increased to 60 gallons per square foot per hour. The suspended solid content being 1.3 and 3.1 pounds per 1000 gallons.

Choice of Filter Equipment

Filter equipment should be chosen after a study of the variations in filterability of the white waters has been made. Ample filtration area and cake space should be provided for peak filtration periods such as would be encountered during washups, etc. Choice of filter, whether pressure or vacuum, will depend upon initial cost, labor for cleaning, operation and maintenance costs, and available floor space.

Conclusions

The results which have been obtained thus far on pressure filtration of white waters, in addition to the data given, indicate that practical filtration cycles of 3 to 8 hours at 30 gallons per square foot per hour using 4 to 16 pounds per 1000 gallons of filter aid and filtration pressure up to 60 p.s.i. can be obtained on average mill white waters. Lower amounts of the filter aid are used and longer cycles are obtained on white waters containing stock from the manufacture of higher quality boards and paper.

Filtration of well or river water can be accomplished using extremely small amounts of diatomacious earth, assuring positive clarified waters which will give satisfactory operation on low volume type showers.

Some effluents which have been filtered contain dyes or pigments but diatomaceous silica filtration will not remove soluble dyes. Water containing such dyes will be filtered clean but will remain colored. Pigments used for coloring such as carbon, iron and chrome oxides, will be removed by filtration. The ultimate use of colored waters will depend upon the color concentration and individual mills ability to reuse these waters. Figure 4 shows the clarification of white waters from a newsprint furnish.

The following advantages, which may be obtained by filtration of white water are:

1. Elimination of solids from effluent, affording

FIG. 4
White Water Before and After Filtration.
B—Machine Effluent (Filler) Newsprint Furnish.

TABLE VI.—FILTRATION TESTS ON MILL D WHITE WATER PRINTED NEWS AND MIXED WASTE FURNISH

Test	Filter Aid	Amount Filter Aid, lb./ 1000 gal.	Suspended Solids, lb./1000 gal.	Rate, gal./ sq. ft./hr.	Cycle Length, min.	Gal./ Sq. ft./ Cycle at 50 p.s.i.
1	None	...	3.3	30	25	12.5
2	Type A	4.17	3.3	30	65	32.6
3	Type A	4.17	2.6	30	80	40.0
4	Type A	8.3	2.3	30	149	74.5
5	Type A	8.3	1.7	30	184	92.0
6	Type A	8.3	3.0	30	190	95.0
7	Type A	8.3	1.3	60	100	100.0
8	Type A	8.3	3.1	60	140	140.0

the possibility of a zero-effluent or closely approaching this point.

2. If a zero-effluent cannot be obtained, effluent will be free of suspended solids which will leave the problem of bacterial oxygen demand. This should not be a too difficult problem with reduced volumes involved.

3. Fiber and filler loss will be eliminated affording considerable savings.

4. The use of low volume showers will reduce fresh water consumption, fresh water pumping costs, and also recirculating pumping costs.

5. Desired temperatures will be maintained at a decreased cost because of recirculation of water.

6. The filter aid used for filtration would be incorporated in the paper or paper board and in most instances sold at a profit.

Discussion

There are several questions which are still to be answered on the use of this system. What effect there will be on build-up of chemical insolubles cannot wholly be predetermined. It is the opinion that this will afford a reduction in chemical cost but may require some treatment or the use of additional fresh water which would not give a zero effluent balance.

It is believed that substantially all mills can benefit by filtration at some point in their operation which will afford reduction in effluents or solids, decrease fresh water consumption, and effect savings in fiber recovery, pumping, and heating costs. Filtration of white waters using filter aids would be, in most all instances, economically unfeasible unless the filter aid can be used back in the paper or board being manufactured. Mills manufacturing high grades of paper may not wish to return the filter cake to their system because of objectionable matter in their effluent but it is conceivable that arrangements could be made with a nearby mill producing paper or board that does not require clean stock to reuse the filter cake in their furnish.

The initial cost of installing a filtration system and employing low volume showers will depend upon the individual mills present equipment and requirements. The estimated cost of operating the filter equipment, including labor and the filter aid, will be in the range of $0.50 to $1.50 per ton of paper. Based on a conservative estimate it is felt that the savings involved will be substantially greater than the operational costs. Further estimates show that the initial cost of completely equipping a mill with low volume showers, filters and necessary auxiliary equipment will be paid off within a maximum 2-year period, based only on the savings which will be effected.

Acknowledgment

The cooperation of the operating and technical departments in the various paper mills in which these tests were run is sincerely appreciated.

Report of TAPPI Nominating Committee

In accordance with Article VII, Section 2 of the Constitution of the Technical Association of the Pulp and Paper Industry the 1948 Nominating Committee has completed its slate of candidates for consideration of the Association by letter ballot to be sent from the headquarters office in December.

It is the practice of the Nominating Committee to select but one candidate for each office to be filled. However, it is provided in Art. VII, Sec. 3 that other nominations, if signed by at least 25 voting members, may be submitted to the Secretary in writing on or before November 20th, and if the nomination so made is accepted in writing by the nominee, the name shall be placed on the official ballot.

The principals of the 1948 Nominating Committee consisted of J. D. Malcolmson, Robert Gair Company, Chairman; P. W. Bartholomew, Hawthorne Paper Company, W. F. Holzer, Crown Zellerbach Corporation, John L. Parsons, Hollingsworth & Whitney Company, and Charles Carpenter, New York and Pennsylvania Company.

The slate selected by the Committee is as follows:

Candidate for President (1 year)—Wilbur F. Gillespie, Gaylord Container Corp., Bogalusa, La.

For Vice President (1 year)—Albert E. Bachmann, Missisquoi Corporation, Sheldon Springs, Vt.

For Executive Committeemen (3 years)—Harold W. Bialkowsky, Weyerhaeuser Timber Company, Everett, Wash.; Frederick C. Goodwill, St. Regis Paper Company, Deferiet, N. Y.; Willis B. Lincoln, Jr., Inland Container Corporation, Indianapolis, Ind.; Albert L. Sherwood, Sutherland Paper Company, Kalamazoo, Mich.

Delaware Valley TAPPI Discusses Urea and Melamine Resins

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry met at the Engineers Club of Philadelphia on Thursday, October 23rd for dinner followed by a technical discussion. Mr. Mcadam, the Section Cchairman presided and John Weidner, of Container Corporation of America, introduced the speaker, Robert W. Auten of Resinous Products & Chemical Company. Dr. Auten presented a paper covering a general discussion of the synthesis and undelying chemistry of urea and melamine resins. He described the general family characteristics and properties of these resins and used both slides and blackboard illustrations to show the probable chemical formulas of these resins at the theree main stages in their development, together with many possible modifications for specific purposes. The formal presentation was followed by a lively discussion of the more practical applications of these resins to specific problems in the paper industry.

Brown Instrument Company TAPPI Engineering Visit

The Brown Instrument Company has arranged an interesting program for the benefit of the pulp and paper engineers who remain in Philadelphia after the Second Engineering Conference on November 6.

All engineers of the industry are invited to visit the Brown Instrument Company plant on November 6th. The factory can best be reached by leaving the Reading Terminal at 12th and Market Streets at 9:25 or 9:42 a. m. The group will meet at 10 a. m. at the factory.

Progress in Alkaline Pulping in 1946*

By Sidney D. Wells[1]

During 1946 and the first few months of 1947, numerous articles have appeared which reviewed the present stage of development of the alkaline processes in the United States, Canada, Scandinavian countries, Germany, and elsewhere. Allo *(1)* pointed out that, in Canada, production amounted to 390,000 tons of unbleached sulphate, 75,000 tons of bleached sulphate, and 35,000 tons of bleached soda, with five mills under construction which will bring in an additional 300,000 tons per year. All this increased tonnage is in Ontario in the Nipigon or Spanish River districts. Anderson *(2)* described the 300-ton bleached sulphate pulp mill at Peninsular, now named Marathon. Stephenson *(3)* describes the 250-ton bleached sulphate pulp mill at Red Rock, converted by the Brompton Pulp and Paper Company from a partially built sulphite pulp mill. At Espanola *(4)* is the former newsprint mill of the Spanish River Pulp and Paper Company, renovated and converted to a 200-ton bleached kraft mill by the Kalamazoo Vegetable Parchment Company. At Sturgeon Falls *(5)* another former newsprint mill of the Spanish River Pulp and Paper Company is being converted to a semichemical pulp and corrugating paper mill. At Terrace near Schreiber, Ontario, a 300-ton bleached kraft mill is under construction for the Kimberly-Clark Corporation. Established plants have also been described—namely, that of the Brown Corporation *(6)* at La Tuque, Quebec and the plant at Dryden, Ontario *(7)*. Recognition of the increasingly important place of bleached kraft pulps and semichemical pulp in national economy seems manifest, even in a country where favorite species for sulphite pulping—namely, spruce and balsam fir—are relatively plentiful. The development of multistage chlorination and bleaching of kraft pulp in the early 1930's and semichemical pulping in the late 1920's seems at least to be bearing fruit.

In the United States, expansion is confined largely to existing plants. A kraft mill *(8)* for pulping hardwood species in place of the sulphite process is under construction at Berlin, New Hampshire. A new plant is almost ready at Port Wentworth, Georgia *(9)*. The Thilmany Pulp and Paper Company *(10)* has installed many improvements so as to excel in the kraft specialty field. The Brunswick Pulp and Paper Company *(11)* has modernized and improved many departments so as to recover heat, enjoy additional brown stock storage and bleaching capacity, and to improve the 250 tons of bleached sulphate pulp.

Why the Union Bag and Paper Company went south *(12)* is told in an illuminating article which shows how the migration made it possible to survive when the price of bag paper descended to $41 in 1932 with a strike on at Hudson Falls, New York. The new plant at Savannah was redoubled in geometrical progression four times, so that now it is the largest producer of kraft paper in one plant in the world.

The mutual advantages *(13)* from the consolidation of the Florida Pulp and Paper Company, including the Alabama Pulp and Paper Company nearing completion, with the St. Regis Company are enumerated by Ferguson *(14)*. Also, the acquisition of the Hummel-Ross Fibre Corporation, originators of cylinder and fourdrinier kraft liner board, kraft butchers, and corrugating paper, by the Continental Can Company is related with much historical matter. Modernization of a large existing integrated pulp and papermaking plant *(15)* by the conversion of its sulphite pulp mill at Canton, North Carolina to bleached kraft with an addition of 60% in production and additions to the boiler plant is described. More than doubling the amount of byproduct high-pressure steam from cooking liquor recovery and the elimination of stream pollution are incidental accomplishments.

Kraft board mills are in course of construction at Macon, Georgia and Palatka, Florida. Increase in capacity through additional units and plant improvement is general throughout the industry and especially in the South. In British Columbia, enlarged capacity is coming in at Port Mellon and a new kraft mill at Port Alberni.

The present state of the industry in Scandinavian countries is discussed by Anderson *(107)* and in western Germany by McGovern and Dickerman *(16, 80)*. Nix *(17)* describes developments at Atenquique, Mexico. Kraft *(18)* discusses sulphate cooking and bleaching practice in Europe.

Stuhr *(19)* discusses the magnitude of the kraft paper production in 1946, the difficult position of nonintegrated mills, and the short supply of soda ash and salt cake. Production in 1947 is estimated at 1,900,000 tons.

Durgin *(20)* enumerates the principal uses of kraft pulp and paper and many of the special uses.

The kraft industry problems are viewed by Davis *(105)*. With Scandinavian imports curtailed and WPB restrictions, the 40% of kraft paper normally going into bags declined to 18%; shipment of grocers' bags for the first 6 months of 1946 had recovered to 85% of prewar consumption; 46.5% of the paper produced went into bags of all kinds; 22.5% was used for kraft wrapping, and 31% for all other forms of conversion. Demand was estimated at 400,000 tons above 1946 supply. New production by the end of 1949 is estimated at 230,000 tons.

Woods Used

In general, all species of wood can be used, although the extent depends upon the cost delivered to the mill, weight of wood per cord, and the fiber characteristics demanded by the product made and of the species under consideration. The various spruces, firs, and pines *(1)* predominate and western hemlock, Douglas fir *(21, 22, 23, 26)*, sugar maple *(24)*, and maple, beech, poplar, and birch *(1, 25)* are used where supply and character of the finished product permit.

Use of sodium sulphite and carbonate as the alkaline cooking liquor in producing pulp from hardwoods makes possible much greater yields and in

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* Prepared at the request of the Alkaline Pulping Committee of TAPPI, K. G. Chesley, Chairman.

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many cases, pulps sufficiently light in color to be used without bleaching *(27, 28, 29, 33, 34, 104)*.

Where tannin occurs in the bark or wood, possibilities of integrating two industries exist; this was the case with the chestnut extract and corrugating paper industry. Studies on several hardwood species have been made *(30, 31, 32)*, which seem to indicate that integration of the production of extracted tannin with soda, sulphate, and semichemical pulping is economically possible with some effort made to coordinate the various factors involved.

Cooking Procedures and Digester Facilities

Positive circulation and indirect heating using heat exchangers with stainless clad or stainless heating surfaces, is becoming more nearly general practice. Often associated with these improvements is chip packing *(1)*. Harper and Edmonson *(35)* report yields 2% greater, chlorine requirement 0.7% (on weight of pulp) less, and tearing strength 13% greater with equal bursting strength. Direct cooking has 35% less maintenance cost and avoids a power cost of 5 cents per ton of pulp. Also, less trouble is experienced in blowing the digester clean. Some mills use forced circulation without indirect heating *(36)*; greater uniformity of pulping is obtained than with natural circulation; less liquor volume is possible, with a proportionate saving in steam. Wilcox *(37)* discussed corrosion troubles, proper time of passage through heater tubes, proper liquor velocity, speed of pumping, and pump packing. Extra cost of alloy steel for heater tubes is often justified. The possibility of improved yields, lower bleachability, and stronger and more uniform pulp is also within reach through the use of preliminary impregnation with black liquor and continuous injection of white liquor so as not to exceed a digester concentration of 20 g. p. l. active Na_2O at any time and at the same time obtain more complete utilization of chemical and removal of lignin residues from the pulp. Schwartz and Bray *(38)* give results of pulping with a continuous flow of liquor through the digester to simulate the performance of Ungerer's process practiced in Austria in the 1890's. Washing of pulp containing a large proportion of unspent alkali is necessary and more complete washing would be required to avoid loss. More easily bleached pulp results at equal yields.

A summary of digesters and cooking conditions *(39)* in 21 mills situated in the South, North, and Pacific Northwest show that they vary from 2 to 24 years in age, 1232 to 4442 cubic feet in volume, 22 to 50 feet in height, 8 feet to 12 feet, 3 inches in diameter, and with 5 to 10-inch blow valves, with 28 digesters having 8-inch valves. Bottoms range from disked 30° to the horizontal to 67° to vertical axis with the average 45°. Seven digesters use indirect heating systems, some throughout the cook but mostly during the first part with direct steaming for the remainder. Pulp is used for board from one third, for paper from one third, and for bleaching from one third of the digesters. Direct cooking takes less time and is more generally used for board. Digester liquor volumes vary from 22.3 to 70% of digester volume, with the majority between 30 and 50%. The active Na_2O used is from 510 to 765 pounds and sulphidity from 18 to 35%, with 25% the average.

Continuous digestion is receiving more thought and attention. Argy *(40, 48)* mentions the Hugenot, Guillon, Kamyr, Asplund, Chemipulp, and de la Rosa continuous digesters and describes their methods of operation. Goldsmid *(41)* discusses the heat balance in digestion.

The application of disintegration or mechanical pretreatment to kraft pulping before washing similar to the practice in many European mills using the kollergange *(15, 45)* or to American mills using the rod mill *(42)* or double disk refiners on semichemical pulp, is described. The Sutherland refiner *(43, 44)* was used on kraft pulp for board with the result that less thoroughly cooked pulps could be used and yields up to 65% were obtained. Use of the jordan for similar work is a possibility *(46)*. In all cases, except with the rod mill, provision (such as magnetic collectors) must be used to prevent tramp iron from the wood yard, wood room, or digesters, when pumped at reasonable consistency, from wrecking the refining equipment. With the rod mill, no harm can occur and with the lower consistency that occurs thereafter in order to pass over vacuum filters, any heavy objects in the pulp will settle in pockets in conduits or vats provided for the purpose. Pretreatment of hot unwashed stock with rods gives maximum fiber separation and liquor release without rupture of individual fibers.

Considerable development *(47)* has occurred in the application of the Asplund refiner and similar devices to the mechanical disintegration of wood chips in the presence of cooking liquors at cooking temperature, especially in the manufacture of material for roofing felt. Uniformity and complete separation of unit fibers are not as vital in this field as for pulps which are to be bleached or used in products where the development of maximum strength is essential. Periods of the order of 30 minutes to 1 hour are necessary for the thorough impregnation of chips of most species of wood and, unless distribution is complete before subjection to cooking temperatures different portions are subjected to various degrees of treatment. For some products it does not matter. Where degradation of cellulose must be avoided in the lignin removal and purification of the cellulose, uniformity of treatment is essential. The problems connected with pulping of agricultural residues are somewhat less difficult. Introduction at a uniform rate into the digester is more difficult unless the raw material is first reduced to a crude pulp capable of pumping. Lewis *(93)* describes utilization by means of a preliminary pulping at atmospheric pressure, separation of the nonfibrous from the partially digested fibrous constituents, and completion of the digestion of the latter by pumping into a pressure vessel provided with simple stirring and heating surfaces, and continuous discharge of the cooked pulp through a heat exchanger to washing and bleaching facilities. The same cooking liquor is used in the digestion and preliminary pulping steps and, by the countercurrent procedure, complete utilization of the active chemical is secured. The nonfibrous fraction is obtained in a high yield for use in boards, and the fibrous fraction is well digested and free from the objectionable nonfibrous cells which have prevented entire satisfaction in the past with pulps from agricultural residues for high grade papers.

Conversion to slush stock of kraft pulps received in dry form, of broke, waste kraft papers, or paper boxes has always been a troublesome step. The Stapley pulper *(49)* has proved very effective and economical for this purpose; it has a large capacity.

Chrome alloy-lined tumbling digesters in commercial use for kraft pulping are now a reality *(50)*. Migration of carbon from the mild steel plate was avoided

by placing a thin layer of nickel between the steel plate and the alloy. By using heavier plate in the girth section, mechanical strength has been so increased that rotation up to 2 r.p.m. has been made possible. Contamination with iron of pulps cooked for bleaching will be greatly reduced and the complete realization of bright white high-strength kraft pulps made possible.

Crandall and Enderlein *(51)* report that the active chemical in the black liquor used for dilution contributes more than its proportionate share to the cooking action. Dilution to 60% with black liquor seems to give optimum results. Up to this degree of dilution, tearing strength at 100% bursting strength is increased progressively. Carlander secured a patent *(54)* at this late date covering the addition of sulphur to the green liquor to maintain a desirable degree of sulphidity in mills having efficient recovery systems and therefore use too small an amount of salt cake for make up of soda base to supply the sulphur needed. Johnson *(52)* discussed the merits of the practice.

Wirth *(53)* reports a fundamental study which shows, with what might be considered extreme conditions from the standpoint of cooking, the results obtained in the treatment of pine with caustic soda, sodium carbonate, and calcium hydroxide at temperatures of 200, 260, 300, and 350° C., respectively.

Foam

An efficient arrangement for breaking foam *(60)* used at Brunswick, Georgia is described. Loss of pulp and black liquor is avoided, as well as the trouble from foam usually encountered in the recovery room.

Washing

Several reports of studies on the performance of vacuum washers have appeared. Lientz *(55)* defines dilution water as that which is flowed into the system minus that which is in the pulp leaving the system. High consistency between stages is essential to good performance. Even formation of cake, uniform application of vacuum and shower water, and elevated temperatures of shower water are important. TAPPI permanganate number as a measure of hardness of the pulp is reflected in the capacity and the efficiency of the operation and the foaming characteristics. Klein, McCall, and Lientz *(56)* discuss further the washing operation based upon the installation at the Union Bag and Paper Company at Savannah, Georgia. J. Richter *(57)* discusses efficiency of displacement washing and suggests that a diffuser placed between filters in series will give results equal to diffusers. R. C. Richter *(58)* gives performance figures for the Jacksonville mill of the National Container Corporation using vacuum filters; he reports the fresh water used as 0.85 gallon per pound of pulp, dilution of black liquor 1.7 pounds of water per pound of airdry pulp, and with no water or dilute liquor entering the sewer. Björkman *(59)* reports studies on washing in a diffuser of 30 cubic meters capacity which indicated the importance of the uniform distribution of the contents for efficiency of performance. Brumley *(79)* reports the performance of screw presses in series of three which have operated five years at St. Marys, Georgia, using remarkably small volume of water, dilution of black liquor and residual salt cake equivalent in the final cake. Crawford *(64)* reports that, where pollution of streams must be entirely avoided in periods of normal and low flow, lagooning of the most offensive wastes and disposal during periods of high water is a practical solution. Ponding the main sewer discharge so as to provide a 3-weeks retention period and a separate lagoon for the most objectionable effluent will also avoid trouble.

Evaporation

A review of the literature published in 1946 was prepared by Badger and Lindsay *(61)*. A review of the literature on heat transfer was prepared by Skaperdas *(62)*. Septuple multiple-effect evaporation is now feasible and generally economic *(63)*, with 5.5 pounds of evaporation per pound of steam condensed the average performance. Large units, long-tube evaporator design, multipass heating elements, stainless steel or chromium plated tubes and body surfaces in evaporators and condensors, and instrumentation have all contributed to the attainment of the results promised by engineers 50 to 100 years ago.

Tall Oil and Turpentine Recovery

Anderson reports *(107)* that tall oil and turpentine are universally recovered in Sweden. Lawrence *(98)* summarizes the equipment, operating conditions, and collection of sulphate turpentine from returns of 24 mills. Norton and Calhous *(103)* discuss factors that cause corrosion in storage tanks and recommend corrective measures. Stainless steel, nickel, and Everdur are recommended where expense will permit.

Thielens and Fuller *(96)* describe a separator for kraft soap used at Gulf States Paper Corporation. Liquor from the second effect is passed through the separator before entering the third effect; there is less loss than when the liquor is taken from the last effect. Also, the soap is lighter in color and gravity. The removal of the soap improves the operation of the last two or three effects. Canadian tall oils *(97)* are reported particularly rich in phytasterols. Fatty acids of the 16 carbon series are absent. The Swedish Pulp Company *(99)* has been recently offering phytosterol to replace cholesterol in the manufacture of hormones. Bergstrom and Trobeck have identified palmitic, oleic, linoleic, linolenic, and carnaubic acids and sterols in tall oil. In the distillate of tall oil, acetovanillone and myristic, stearic, sebacic and adipic acids have been identified. Juvonen *(65)* reports that the pitch resulting after the distillation of the fatty acids from tall oil and the separation of the rosin acids by crystallization can be used for sizing kraft papers or boards. The crystallized fraction yields a rosin size equal to that prepared from gum rosin. Harris *(66)* proposes to separate the resins acids by precipation, using cyloohexylamine, *p*-dodecahydroxenylamine, or 2-amino-2-methypropanol.

Gaffney and Cargill *(67)* state that one third of the consumption of tall oil in 1946 went into soap. Byman *(68)* gives a summary of consumer opinion under present and future conditions; he gives 111 references.

Among uses for tall oil, the following were indicated by patents issued recently:

Printing ink *(94, 95)*, heavy pressure lubricant and cutting oil *(101)*, binder for manufacture of linoleum, foils, laminants, etc. *(69)*, and as a promoter *(102)* of adhesion between bituminous materials and road aggregate. With the exhaustion of high-grade iron ore in Minnesota, tall oil may serve an important role as a frothing agent *(70)* for the removal of silica, thereby raising the quality of the lower grade ore. It is proposed also as an agent for rendering concrete scale resistant *(71)*. Not more

than 0.5% and preferably 0.015% of tall oil on the weight of the cement, when added to the clinker, aids in the grinding, increased grinder capacity, saves power and, in addition, gives the nonscaling resistance to the concrete in which it is used. Factice products are possible on polymerization *(112)*.

Testing Methods

Potentiometric titration enabled Borlew and Pascoe *(72)* to trace the consumption of NaOH and NA_2S throughout the cook. End points at pH 11.0, 10.0, and 8.25 were used. It was found that only a small portion of the Na_2S charged was consumed during the cook. Combined with argentimetric titration *(73)* of mercaptans, the course of the sulphur was traced.

Harva *(74)* describes a quick titration method, using a potentiometer to ascertain the rosin acid content of tall oil. Reading a few points in the neighborhood of pH 4.4 and 9.75 established the end points needed and satisfactory agreement with the Hasting-Pollak method was observed. The Analysis Committee of the Central Laboratory of the Cellulose Industry describes a rapid method *(75)* for analysis of raw and distilled tall oil and a method for complete analysis. The American Society for Testing Materials has issued a tentative method *(76)*.

Browning and Calkin *(113)* review the literature pertaining to the fatty acids in tall oil. Its nature, composition, and recovery have also been discussed *(114)*.

Recovery Operation and Equipment

Moore established at La Tuque, Quebec, 35 to 40 years ago that rotary incinerators were superfluous and that the smelter directly under the boiler, with proper conditions for combustion, gave the desired reduction of salt cake; over a thousand boiler horse power of steam for general use was also available. Great advances in boiler and water wall furnace design have occurred since that time. Several papers *(77, 78)* have appeared which indicate the present state of recovery furnaces and waste-heat boilers. Twelve to fourteen thousand pounds of high pressure steam per ton of pulp produced is often generated in the recovery operation and units taking the black liquor from three hundred or more tons of pulp per day are standard equipment *(106)*. Auxilliary equipment, such as stabilization towers to oxidize the sulphur compounds to reduce corrosion in evaporators, flue gas evaporation in cyclonic towers or disk evaporators, packed absorption towers to scrub the flue gases and recover sulphur dioxide, and electrical precipitation of such gases have all been improved.

Many references to the performance of the Cottrell electric precipitator have appeared *(15, 78, 81, 82, 83, 84, 89, 106)*. Wet-type pipe precipitators are usually employed in soda pulp mills. In sulphate pulp mills, the dry-rod curtain type seems to be favored. Efficiencies of 95% are reported with 100 pounds or more of sodium sulphate recovered per ton of pulp. The experience of some mills in the past has been sad but the universal adoption in recent years indicates improvement and knowledge to the point where smooth operation is assured. In some instances, odor abatement is accomplished.

McKeown *(85)* calls attention to the heat loss that may occur with continuous blowoff systems for boilers and suggests means for utilization of flash steam and heat exchangers for recovering as much heat as possible from the liquid run off. The method of calculation is shown. Kominek and Kahn *(86)* describe the clarification of green liquor by means of tray settling tanks and magnesium sulphate as the coagulant. Great improvement in the settling properties of the recovered lime from the causticization operation was observed.

Removal of carbon from hot concentrated caustic solution *(87)* is possible by the use of anthracite coal in the filter beds. Water filtration is another application recently effected.

The benefits derived from the automatic control of rotary lime kilns are described *(88)*. Fuel input is adjusted to the change in the load.

The Morse Boulger Destructor Company *(90)* offers an improved lime recovery kiln which produces much less dust.

Somerset *(91)* proposes a method for the electrolytic treatment of green liquor using mercury cells with primary and secondary compartments for the production of caustic soda and hydrogen sulphide. The latter is absorbed in caustic soda to produce sodium sulphide. McIntosh *(92)* discusses kraft mill maintenance. Zinc and cadmium plating increases pin life in drag conveyors where water is used for lubrication. Automatic switches to stop conveyors when chains break avoid more extensive breakage. Wood should fall on wood on entering a drum barker. Stainless clad steel plate avoids corrosion in digesters, cyclones, exposed surfaces in washers, etc. Building up and peening the corroded portions of a digester at the proper temperature extend its life. Monel metal for diffuser bottoms, evaporator condensate pump rods or shafts, etc., greatly extends the life of the equipment and reduces maintenance. Stainless clad tube sheets and stainless tubes in No. 1 and No. 2 effects are recommended. Stainless steel pipe lines, Ni-Resist fittings, and alloy pumps will greatly reduce down time and maintenance. Chromium-plated tubes are being investigated. They are very satisfactory for surface condensors. The lining of dissolving tanks with hard brick or concrete is urged. Propeller type agitators are superior to the old type. Stainless steel or Monel for clarifier trays will greatly extend their life. Flow boxes lined with cement anchored to steel with welded reinforcing give long life; cement-lined pipe can be used for white, green, or black liquor tanks. Planning ahead for jobs to be done during shutdown periods and those that can be done while running is advisable.

Purification and Bleaching

In the early thirties it was discovered that the chlorination of kraft pulp could be accomplished at low density in reasonably simple tile tanks provided with rubber covered propellers and wooden draft tubes. Continuous chlorination in acidproof pipe lines and rubber-covered mixers, followed by retention towers was soon adopted. Washing on acidproof vacuum filters or deckers followed, with caustic extraction at high density. After washing with more or less standard equipment, one or two stages of bleaching, using standard high and low density bleachers, in which an alkalinity above pH 8.6 was maintained, yielded bleached pulp with a brightness comparable with that of bleached sulphite and without the loss of the strength inherent in unbleached kraft.

Fifteen years of experience has increased the type of equipment available for this purpose and shed light on many details of the process. Swartz *(108)* outlines the present state of the art, discussing pre-

liminary impregnation and injection so as not to exceed 20 concentrations of grams per liter of active alkali during cooking and yet not go below 15 g. p. l. and maintenance of 17.6% sulphidity. Twenty to 25 per cent of total alkali is used in direct cooking with 18 to 20% active alkali. The effect of pH control during bleaching is shown by graphs giving the effect on time, bursting strength, tearing strength, residual lignin, reflectance, 1% NaOH solubility, alpha-cellulose content, and copper number. Decomposition of hypochlorite solutions is shown to increase 2.5 times per rise of 18° F. in temperature. Temperatures above 115° F. cause excessive degradation of pulp, and long periods at lower temperatures cause yellowing of pulp. At 4 to 6% consistency, 105° F. is preferred and at 10 to 16% 95° F. Part of the yellow color characteristics of bleached sulphate pulps is caused by ferric compounds. Reduction to the ferrous state assists in removal and addition of a trace of potassium ferrocyanide converts the last traces of iron to Turnbull's blue and thus brightens the pulp by changing the yellow color to blue.

Complete washing is very important and sulphurous acid *(110)* in the wash water helps both from its reducing and acidic nature. The use of heat exchangers to recover heat from waste gases and waters for raising the temperature of stock in the winter and of wash waters throughout the year is advocated.

Kraft *(18)* describes the Kamyr bleaching systems used extensively in Europe. Vertical bellmers are favored and stainless steel is used extensively. Washers handle 1 ton of pulp per day per square foot of filtering surface. Chlorine dioxide (from the reaction of sodium chlorate and sulphur dioxide and a catalyst with yields of 90% of chemical) is used for the final stage in some plants.

Lawrence *(111)* discusses sodium chlorite as a finishing stage in bleaching. Predried pulp yielded a higher ultimate brightness. Hypochlorite-activated chlorite gave results about equal to the acid-activated chlorite and could be used with existing mill equipment. The pH and ratio of hypochlorite to chlorite are important.

The use of pulp as a water-filtering medium in Sweden is mentioned by Anderson *(107)*. The avidity with which bleached pulp will pick up dirt and color from water used for washing would indicate great possibilities for the use of pulp as a filtering medium. It can be reused frequently and finally sold to board mills.

This review has been compiled for the Alkaline Pulping Committee of the Technical Association of the Pulp and Paper Industry. It has been done with the object of including references which appeared in 1946 or which referred to reports on work accomplished in 1946. A monograph on alkaline pulping for The Alkaline Pulping Committee of the Technical Section of the Canadian Pulp and Paper Association, covering the five years of 1941-1945, has been prepared by the Pulp and Paper Research Institute of Canada under the supervision of Dr. J. H. Ross and copies will be made available by sale to members of TAPPI. It is hoped that the period 1946-1950 can be likewise covered in due time and that this review may be a step in that direction.

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Niagara Falls TAPPI Group Meets

The Western New York Group, Empire State Section, Technical Association of the Pulp and Paper Industry held their monthly meeting at the Prospect House, Niagara Falls, N. Y. on October 15, 1947. Martin Jaffe, Chairman of the Empire State Section of TAPPI, announced that the Junior Essay Contest would be resumed after a lapse of five years. This contest is open to all junior members of TAPPI. Competition is based on a paper on independent research conducted by the junior member. He also reported on the Mill Method Survey which is being conducted to compile those testing methods which are used by mills in addition to standard methods being used by the mills.

Homer Rice, a member of the Executive Committee stressed the constructive influence of TAPPI on the Paper Industry. Gordon Storin, of the Niagara Alkali Company reported on the Plastics meeting held in Syracuse, N. Y. in September and on the convention of Superintendents and Technical Association members held in Asheville, N. C., in October.

Dr. J. S. Reichert of E. I. du Pont de Nemours Inc., Niagara Falls, N. Y. introduced the speaker of the evening, Dr. Frank K. Signaigo, Associate Director of Pioneering Research, Rayon Dept., E. I. du Pont de Nemours, Inc., Buffalo, N. Y., who spoke on "Cellulose, Rayon and Nylon." Dr. Signaigo explained the three main processes for preparing synthetic filaments, namely; wet, dry and melt spinning. With the use of slides, he described the various phases and equipment in manufacture of viscose rayon, acetate rayon and nylon. A movie film was shown illustrating the actual manufacture of both viscose and acetate rayon from the raw materials to the finished product.

The meeting was attended by forty technical men from the local and surrounding industries.

Dr. A. H. Nadelman, General Chairman of the group, presided and announced that the next meeting will be held on November 19th at the Prospect House in Niagara Falls. Mr. John Catlin, Kimberly Clark Corporation, will speak on "Statistical Quality Control in the Paper Industry."

Kalamazoo TAPPI Discusses Research

The Kalamazoo Valley Section of TAPPI held their October meeting at the Columbia Hotel on Thursday, October 9th.

The first speaker of the evening was Allen Abrams, resident director and vice-president of the Marathon Corporation, whose topic was "The Setup and Operation of a Technical Department." Mr. Abrams in describing the modern trends in the organization and operation of research departments, stated that: "The research department must report and be responsible to the top officers of the company. If at all possible, it also must be a separate unit going so far as to showing its own profit and loss statement. Companies having a research unit of this type have shown a remarkable return on the dollar invested."

The research director occupies an important position in the company adn must be an efficient operator as well as a good salesman. Successful operation of research departments is dependent upon the director's ability to screen projects since one should not be started unless it is reasonably sure of success. Also, the director must know when to start and when to stop a project. About 50% of all research problems are suggested from within the research organization itself, the balance of the problems come evenly divided from sales, management, and production.

Mr. Abrams' talk was followed by D. L. Gibbs, Manager of Plastic Sales and Sales Service of the Dow Chemical Company whose subject was "Development and Marketing of Technical Specialties." Mr. Gibbs described the Dow organization and then with the aid of slides followed the path of one particular problem through research and then on through the rest of the organization. In this instance, he followed a latex product that with many other materials showing promise for coating work had been referred to Dow's Special Coatings Technical Service department which is their referee organization between research sales and production. The products were screened to determine their suitability for manufacture and were evaluated very carefully through tests and field trials.

The products found satisfactory were turned over to sales. Here again the service department functioned by preparing talks, writing articles, and giving sales special technical information to aid in their distribution.

The talks were followed by a panel discussion headed by W. Kirkpatrick of the Allied Paper Mills, and included Dr. W. P. Campbell of the Hercules Powder Company and Mr. H. F. Roderick of the Wyandotte Chemical Co. Mr. Kirkpatrick was also program chairman for the evening while Mr. L. Mimms presided over the meeting in general.

TAPPI Meets at Alton, Ill.

More than 100 individuals attended the fourth fall meeting of the Technical Association of the Pulp and Paper Industry, held at Alton, Ill. on October 23-24, 1947. This meeting was sponsored by the TAPPI Fibrous Agricultural Residues Committee. S. I. Aronovsky of the Northern Regional Research Laboratory, Peoria, Ill., was general chairman. All sessions were held in the conference room of the Alton Box Board Company.

The first session was opened by N. F. Wilson of the Alton Box Board Company who was chairman of the arrangements committee. Mr. Wilson introduced the individuals present. M. F. Swaim, Vice President and General Manager of the host company extended greetings and said, in part:

"We feel that the holding of meetings, such as this, at the various interested mills is a very constructive move. It has long been our policy to give if we expect to receive. We have found that we have gained much pleasure from our workaday accomplishments only if we shared these accomplishments and so-called "know-hows" with others interested in our same field of endeavor.

R. G. Macdonald, Secretary of TAPPI responded to Mr. Swaim's welcome and reported on the various fall meetings held by the Association. He described many of the Association activities and commented on the importance of the work of the Fibrous Agricultural Residues Committee in the Association work.

Dr. Aronovsky assumed the chairmanship of the meeting and called upon B. Franklin Stahl of the Terre Haute Paper Company, Terre Haute, Ind. to present a paper on "Treatment for Prevention of Decay in Stacked Straw." Hillard L. Smith of the Dow Chemical Company, Midland, Mich. was a co-author of this paper. In this paper the authors reported on their experience in treating the tops of baled straw piles with certain chemicals to prevent the growth of molds, yeasts and fungi.

Dr. Aronovsky and H. M. Sertcliff of the Northern Laboratory discussed the "Rapid Estimation of Straw in Bales." This paper was based on a current investigation of the Delmhorst Moisture Detector which operates on the electric resistance principle. The results on bales of less than 25 per cent moisture content were quite good.

Mr. Wilson gave a survey report on "Moisture Testing of Baled Straw by Electronic Methods" in which he outlined the operating principles of several available instruments.

R. G. Goodwin of Paper and Industrial Appliances, New York, N. Y., presented a paper in which he described the Morley Continuous Pulper for Straw. Mr. Morley who is manager of the Thames Board Mills, Penfleet, England, was present and responded to a large number of questions. The system consists in the passage of chopped straw through a series of pipes, 23 inches, i.d. and its continuous treatment with 10 per cent caustic soda, based on the weight of the straw. About 70 per cent yield is claimed as well as a throughput of 38 tons per day. The cycle is about 20 minutes. This represents 27 bales of straw at 84 pounds each per hour. The pipes are made of mild steel. The steam pressure was 20 lb. per sq. in. The entire installation requires about 6000 cubic feet.

J. R. Little of Hinde & Dauch Paper Company, Sandusky, Ohio, discussed "The Stake of the Strawboard Industry in Rule 41." This rule relates to the specification for size, weight and burst of container boards used for railroad shipping containers. There appears to be no change in the rule expected although there is consideration being given to the introduction of a compression test for containers. Mr. Little indicated that the industry should make every effort to improve quality of strawboard as a container material to meet future requirements. Strawboard has certain inherent advantages such as rigidity. Although the railroads would like to have performance tests developed, there does not seem to be any single test that will give an answer that would be satisfactory. Nine point straw was claimed to be the best medium for corrugating.

The group was a guest of the Alton Boxboard Company at luncheon. Following the luncheon W. F. Gillespie of the Gaylord Container Corporation, Bogalusa, La., and President of the Technical Association gave an address in which he described the services of the Association and its operation. He outlined the various publication activities which are unusually extensive. He described the committee and sectional organization and the various meetings of the Association.

Following luncheon a visit was made to the mill of the Alton Box Board Company where an opportunity was given to see the new seven cylinder high speed machine recently installed by the Company.

There was a banquet in the evening at which Dr. Aronovsky presided as toastmaster. Addresses were given by Fred Olsen, Research Director of the Western Cartridge Company, E. Alton, Ill., who indicated some of the benefits of research to industry. To date it appears that for every dollar spent about ten dollars benefit can be expected. G. S. C. Semmons of the Australian Pulp and Paper Company gave an interesting talk on various aspects of Australian economy and industry.

The meeting of Friday, October 24th, was devoted to consideration of the various subcommittees of the Fibrous Agricultural Residues Committee.

Cooperative work is being carried on by TAPPI, the Farm Equipment Institute and the American Association of Agricultural Engineers in reference to the development of suitable one-man bales to enable a large number of farmers to collect straw for the mills.

Dr. Aronovsky reported that 25,000 copies of the paper presented to TAPPI in February, 1947, by Dr. Willard has been distributed to farmers. This paper related to the deleterious effect of allowing straw to remain on farmland after harvesting.

The Testing Subcommittee discussed its effort to develop a means of preparing an adequate test sample of corrugated board.

A survey of the equipment used in strawboard mills is being made through the medium of a questionnaire.

The Pulping Subcommittee reported that the use of rod and ball mills in strawboard plants has been discontinued. The use of the neutral sulphite cooking process is replacing the old lime-cook process.

Following luncheon at the Stratford Hotel visits were made to the plants of the Western Cartridge Company in East Alton, and the Owens-Illinois Glass Company in Alton.